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YEAR BOOK 1942

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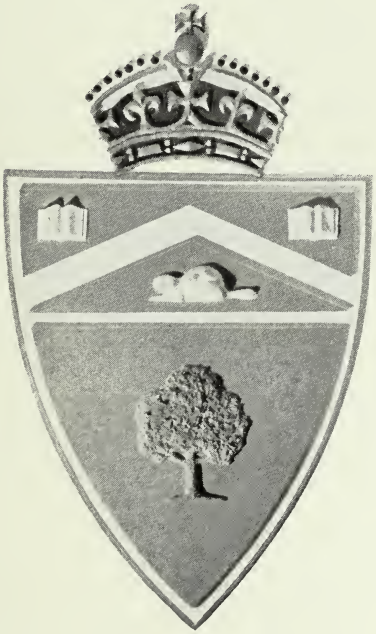
[Vol 55]

ENGINEERING SOCIETY

THE UNIVERSITY OF TORONTO

Transactions
and
Year Book
1942



Engineering Society

THE UNIVERSITY OF TORONTO

Roll of Service

THE Roll of Service presented herein contains the names of those graduates who have enlisted since the publishing of the last Roll, or whose names, through some mischance, did not appear on that Roll. A complete record may be had by combining these names with those in the 1941 issue of this Year Book.

Our aim has been to make as complete a roll as possible, but there are no doubt many omissions. For these omissions we humbly apologize, and ask that they be brought to our attention for inclusion with the next roll.

The Records' Office of the University of Toronto has been an invaluable aid, and we wish to acknowledge their kind co-operation.

This year, too, it has been our sad duty to compile the first list of casualties — graduates of this institution who have made the greatest sacrifice in defence of their ideals. Their names are inscribed below:

Harris, W. A., '38 ..... *Missing, March, 1942*
Maher, G. T., '39 ..... *Killed, flying accident, November, 1939*
Burness, K. C., '24 ..... *Missing, May, 1941*
Orok, R. J., '39 ..... *Missing, June, 1941*
Briggs, E. R., '36 ..... *Killed, air crash, September, 1941*
Clements, J. R., '38 ..... *Killed in action, September, 1941*
Knowles, R. E. ..... *Killed in action, December, 1941*
Troup, A. W. ..... *Missing, December, 1941*

Roll of Service

Algie, W. E., '32	R.C.A.F.
Allan, D. S., '41	R.C.N.V.R.
Allan, D. H. W., '42	R.C.E.
Archer, A. S., '31	R.C.A.F.
Anderson, S. G., '27	R.C.A.S.C.
Abernetly, W. W., '23	R.C.E.
Arnott, B. M., '33	R.C.E.
Adlard, L. S., '15	Indian Army
Angus, D. L., '41	R.C.O.C.
Briggs, E. R., '36	R.C.A.F.
Barry, A. J. J., '41	R.C.O.C.
Burton, H. R., '21	R.C.E.
Beattie, F. N., '40	R.C.C.S.
Bassett, C. M., '32	R.C.O.C.
Burnham, E. L., '34	R.C.A.F.
Balls, R. P., '38	R.C.A.F.
Boone, G. L., '31	48th Highlanders
Blake, W., '35	R.C.C.S.
Buckanan, F. M., '15	R.C.A.F.
Brittain, W. D., '33	R.C.A.F.
Baker, A. A., '41	R.C.N.V.R.
Bond, F. M., '41	R.C.N.V.R.
Booth, B. F., '41	R.C.N.V.R.
Buss, R. J., '35	R.C.O.C.
Brown, K. M., '32	R.C.E.
Cornish, D. F., '34	R.C.O.C.
Cooperman, B. I., '34	R.C.A.F.
Campbell, W. A., '35	R.C.O.C.
Campbell, D. B., '39	R.C.E.
Campbell, A. C., '39	R.C.O.C.
Cairns, J. H., '34	R.C.E.
Cockshutt, C. F., '23	R.C.O.C.
Campbell, W. M., '28	R.C.O.C.
Cavell, W. E., '40	R.C.O.C.
Christian, J. D., '37	R.C.E.
Copeland, J. C., '40	R.C.E.
Cowie, W. E., '33	R.C.A.F.
Campbell, T. L., '23	R.C.A.F.
Campbell, C. G. S., '39	R.C.C.S.
Church, B. G., '37	R.C.A.F.
Carriere, M. F., '37	R.C.O.C.
Carr, J. A., '41	R.C.A.F.
Conners, W. M., '24	R.C.A.F.
Crawford, R. C., '35	R.C.E.
Charles, F. R., '33	R.C.A.F.
Coy, W. B. A., '39	R.C.N.V.R.

Roll of Service

Dorfman, E. A., '30	R.C.E.
Dunn, J. R., '38	R.C.N.V.R.
Dowler, A. E., '25	R.C.E.
Davison, A. W., '29	R.C.A.F.
Drowley, F. V. G., '39	R.C.E.
Downey, G. A., '15	R.C.A.
De Maio, A., '37	5th Can. Inf. Bde.
Eastwood, J. H., '16	R.C.N.V.R.
Evans, E. M., '41	R.C.A.
Evans, R. A., '41	R.C.A.
Elliot, J. S., '36	R.C.E.
Elliot, W. F., '24	R.C.O.C.
Eakins, J. W., '41	R.C.N.V.R.
Forrester, R. A., '40	R.C.E.
Finlayson, J. C., '40	R.C.A.F.
Foster, H. L., '41	R.C.A.F.
Frizzell, A. S. W., '32	R.C.A.S.C.
Goodwin, G. L., '41	R.C.N.V.R.
Galway, E. T., '40	R.C.E.
Gross, R. F., '35	R.C.A.F.
Graham, T. C. G., '25	R.C.O.C.
Graham, T. S., '15	R.C.E.
Greer, J. M. C., '41	R.C.A.F.
Gordon, C. W., '25	
Hornibrook, J. A., '37	R.C.A.
Hunt, F. R., '41	R.C.N.V.R.
Hanning, J. R., '23	Ont. Regt.
Hall, J. B., '40	R.C.N.V.R.
Hachall, W. F., '27	R.C.A.F.
Halley, G. H., '14	R.C.O.C.
Hustwitt, S. A., '14	R.C.A.F.
Heron, B. O., '26	R.C.O.C.
Harron, L. W., '16	Can. Army Trades School
Hayward, R. E. G., '27	R.C.E.
Hislop, W. G., '30	R.C.A.F.
Howe, J. J. A., '33	R.C.A.F.
Hall, F. C. B., '37	R.C.A.F.
Hyde, H., '26	R.C.E.
Holmestead, D. S., '35	R.A.O.C.
Hore, L. T., '41	R.C.O.C.
Isbister, J. E., '40	R.C.E.
Irvin, W. C., '36	R.C.A.F.
Ironside, G. A., '15	Midland Regt.
Jupp, A. R., '41	R.C.O.C.
Jones, H. T., '41	R.C.N.V.R.
Jordon, J. M., '34	R.C.E.

Roll of Service

Jenning, Q. L., '38	R.C.A.S.C.
Janes, J. M., '39	R.C.A.F.
Jeffs, G. A. F., '36	R.C.A.F.
Kirk, T. A., '32	R.C.A.F.
Knott, S. R., '40	R.C.A.F.
Kirk, G. T., '41	R.C.O.C.
Lake, F. A. G., '39	R.C.E.
Linton, O. T., '43	R.C.E.
Layley, C. P., '21	R.C.A.
Little, D. H., '38	R.C.O.C.
Lloyd, C. G., '35	R.C.N.V.R.
Morse, D. S., '40	R.C.E.
Mould, N. L. J., '40	R.C.E.
Maw, J. T., '38	R.C.A.F.
Macklin, W. H., '24	R.C.C.S.
Millar, B. H., '22	Dufferin Rifles
Morton, P. S., '29	R.C.A.F.
Murray, W. G., '40	R.C.C.S.
Murphy, H. T., '27	R.C.A.
Marten, H. A., '35	R.C.O.C.
Mustard, J. N., '41	R.C.E.
Mode, D. H., '39	R.C.E.
Muckle, H. B., '40	R.C.A.F.
Mole, H. W., '41	R.C.C.S.
Miller, J. A., '41	R.C.E.
Muir, J. M., '15	No. 23 T.C.
Millican, J. F., '26	R.C.E.
Moore, W. A., '41	R.C.E.
MacDonald, D. A., '41	R.C.E.
Mackay, M. A., '40	R.C.A.F.
Maclean, H. J., '41	R.C.O.C.
MacDonald, G. L., '28	R.C.E.
MacPherson, M. R., '39	R.C.A.F.
MacDonald, E. A., '39	R.C.A.F.
MacPherson, A. B., '31	R.C.A.F.
MacMillin, J. P., '37	R.C.A.F.
Maclean, A. L., '41	R.C.O.C.
McQuaid, T. J., '40	R.C.A.F.
McLaren, W. H. O., '40	R.C.O.C.
McLellan, R. A., '12	R.C.A.F.
MacDonald, C., '34	
McCabe, R. H., '23	R.C.A.F.
Maclachan, K. S., '13	R.C.N.V.R.
McGregor, D. E., '40	R.C.N.V.R.
McIntosh, H. A., '24	R.C.N.V.R.
McCort, C. R., '15	Can. Forestry Corps

Roll of Service

McBride, J. M., '33	R.C.A.F.
McQuarrie, J. L., '41	R.C.A.F.
McDonald, C. J., '30	R.C.A.F.
McLachlin, A. L., '42	R.C.E.
Neelands, R. E., '36	R.C.E.
Nash, A. L. S., '22	R.C.A.
Norman, R. M., '28	R.C.E.
Nattress, D. Q., '23	R.C.E.
New, R. J., '38	R.C.A.F.
Olver, A. S., '29	R.C.O.C.
Phillips, J. J., '20	R.C.A.F.
Pitts, W. O., '41	R.C.O.C.
Pratt, J. A., '35	R.C.C.S.
Penny, A. E. C., '37	R.C.E.
Parkinson, R. N., '41	R.C.N.V.R.
Popplewell, H. H., '31	R.C.C.S.
Pringle, W. A., '39	R.C.E.
Procunier, G. W., '41	R.C.O.C.
Patterson, W. P., '40	R.C.C.S.
Perry, E. A., '35	R.C.O.C.
Pallett, S. H., '35	R.C.A.F.
Pitt, C. B., '27	R.C.O.C.
Philpot, F. W., '39	R.C.E.
Powell, G. C., '39	R.C.E.
Potter, H. N., '37	R.C.A.F.
Polley, E. V., '42	R.C.E.
Reiner, M. E., '33	R.C.A.
Raney, A. F., '40	R.C.E.
Robins, C. P., '27	R.C.E.
Reid, H. M., '40	R.C.A.F.
Riddell, J. M., '13	R.C.E.
Renault, A. H., '41	R.C.O.C.
Ross, J. H., '39	R.C.N.V.R.
Ramore, W. D., '41	R.C.E.
Reid, M. A., '41	R.C.O.C.
Relyea, J. D., '21	R.C.O.C.
Ruddock, W. M., '42	R.C.O.C.
Rubinoff, A. L., '36	R.C.O.C.
Robertson, E. E., '39	R.C.N.V.R.
Ridout, J. C., '39	R.C.A.F.
Rose, F. A., '41	R.C.O.C.
Sinclair, W. B., '40	R.C.E.
Suzinki, R., '27	R.C.E.
Smythe, R. E., '26	Staff H.Q.
Stark, H. G., '40	R.C.N.V.R.
Swan, W. G., '06	R.C.E.

Roll of Service

Smith, B. K., '41	R.C.N.V.R.
Stuart, H. B., '09	R.C.E.
Starr, C. F., '41	R.C.O.C.
Satlker, W. D., '21	R.C.A.
Stewart, M. D., '39	R.C.O.C.
Scrivener, R. H., '36	R.C.N.V.R.
Storms, D. H., '20	R.C.E.
Schell, N. D., '37	R.C.E.
Smythe, C., '20	R.C.A.
Spencer, A. C., '08	1st Hussars
Steeves, W. E. W., '41	R.C.E.
Stirling, J. P., '41	R.C.E.
Smith, G. E., '36	R.C.E.
Sorby, W. O., '27	R.C.A.
Swick, M. V., '41	R.C.O.C.
Stewart, M. D., '22	R.C.E.
Sirdevan, J. A., '34	R.C.C.S.
Shields, E. M., '29	R.C.O.C.
Simpson, J. W., '41	R.C.N.V.R.
Seltzer, G. L., '37	U.S. Army
Smillie, D. W., '33	R.C.C.S.
Smith, H. P., '41	
Smythe, C. S., '43	R.C.N.V.R.
Smith, J. E., '36	R.C.A.
Spencer, B. G., '41	R.C.A.F.
Slemin, H. C., '34	R.C.A.F.
Sheppard, T. W., '42	
Shaw, J. R., '37	R.C.E.
Thompson, J. M., '33	R.C.E.
Thompson, J. Q., '39	R.C.E.
Thompson, N. J.	R.C.A.F.
Turner, S. D., '40	R.C.A.F.
Taylor, R. E., '25	
Thompson, R. B., '39	R.C.O.C.
Thomson, W. A., '30	R.C.A.F.
Tuke, J. F. D., '37	R.C.A.F.
Verthy, T. W., '37	R.C.A.F.
West, L. C., '41	R.C.O.C.
Weir, C. V. F., '29	R.C.E.
Woodrooffe, H. M., '34	R.C.E.
Watson, J. M., '30	R.C.A.
Wood, W. J., '32	R.C.A.F.
Walker, F. G., '37	R.C.C.S.
Wachsmuth, W. A., '41	R.C.O.C.
Wilkes, F. C. D., '40	R.C.A.F.
Young, L. W., '41	R.C.E.

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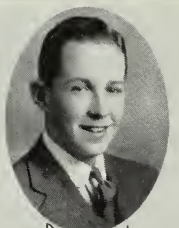

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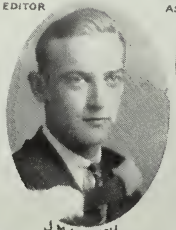

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Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1941-1942

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TRANSACTIONS AND YEAR BOOK

of the

University of Toronto Engineering Society

No. 55 APRIL, 1942

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EDITORIAL

YOUR Board of Editors takes great pleasure in presenting the 1942 edition of TRANSACTIONS AND YEAR BOOK. Between its covers we have endeavoured to sketch an accurate and complete picture of School activities during the past year—our earnest hope is that we have succeeded.

The general layout of the book will be found to be much the same as in previous years, as we deem it an advantage for you to know beforehand just where to find things.

The Roll of Service has been brought up to date, and is again given the position of honour in the book. Two student papers have been reproduced as examples of the fine work being done by undergraduates of this institution. The Transactions section is completed with articles by two of our professors—we commend them to you as giving much "meat" for you to "chew on".

Social and Athletic doings have been recorded as fully as space would permit. Unfortunately, many of our most deserving teams had to be left unmentioned as it has long been the policy to reserve space in the YEAR BOOK primarily for teams composed

of graduating members. School's thanks to these unsung heroes are nonetheless sincere.

This year has seen very many changes and new developments, undreamed of a year ago. When the late General Mitchell resigned as Dean of this Faculty last year, we fully expected to see him often as a visitor in these pages; that was not to be. We were indeed fortunate in obtaining a man so well qualified to carry on General Mitchell's work as his successor, Dean C. R. Young. You will find Dean Young's literary bow to this publication immediately after President Cody's message.

As you no doubt konw, chlorine for bleaching purposes in the manufacture of paper has been drastically reduced because of the need for this chemical in the munitions industry. Fortunately, paper for this issue was ordered far ahead of the time of its use and is of the same quality as in previous years. Future issues, however, will be on the 'not-quite-so-white' variety of paper. We would like to pass on the thought that the colour of the paper is of little import, if the word be there.

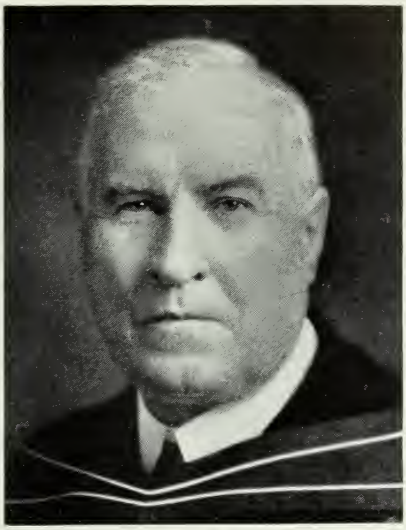
The increased tempo of Canada's war effort has been manifested to us this year in the curtailment, by a large number of firms, of such 'non-essential' advertising as is found in this book. We realize the necessity of these steps, but at the same time we would like to acknowledge our appreciation and thanks to those organizations who have found it possible to continue their association with us. As a personal favour to our Business Manager, we urge you to keep the names of these firms in mind for the future.

As Editor-in-Chief, I wish to thank the other members of the Board for their assistance and untiring energy in gathering the material for this book. To all who have contributed, we are deeply grateful, and hope that our persistence in certain instances has left no ill feelings.

A final thought: if your criticism is constructive, let us hear it —only thus will TRANSACTIONS improve.

W. W. BOLTON.

A MESSAGE FROM THE PRESIDENT



As once more THE TRANSACTIONS AND YEAR BOOK is issued by the Engineering Society of the University, I gladly avail myself of the opportunity to contribute a word of greeting to the members of this great Faculty of Applied Science, and more particularly to those who are graduating this year. These are stern days rather than dark days; they are great days, challenging days, days full of calls for the trained engineer and the contribution he can make both to industry and to war.

This year has marked a new chapter in the life of "The School". A new leader, Dean C. R. Young, guides your destinies, He is a worthy successor of worthy predecessors. Members of the staff and students alike have welcomed him as their commander. He knows the traditions and conditions of the institution, but his knowledge and outlook are wider than the institution. Already he is linking the graduates outside with the several departments in which as students they were trained, by organizng them as advisory committees; and he is seeking by personal visitation of great industrial plans to keep industry in touch with "the School" and "the School" in touch with industry. The closer these mutual relations, the better for both sides.

There are certain much-needed additions to our buildings;

war conditions make it impossible to erect those at present, but careful consideration is now being given to plans and the general relation of the several parts to the whole.

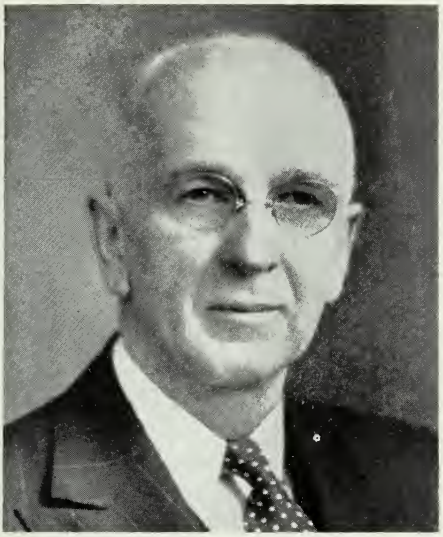
There have been times of depression, when the engineering graduate was uncertain of his future; this is not the case today. The Engineer comes at once into his own. The grim necessities of war production have called for a national expansion of industry; engineering graduates and undergraduates are needed in every department of national life. Applied Science and Pure Science will in a real sense win the war. Both the field of battle and the supply shop of industry are calling for your head and your hand. May success and plenty of work attend you wherever you go!

Under a mural painting in the Library of the Engineering Societies Building in New York—the gift of Andrew Carnegie to the Engineering profession—are these words: Engineering is "the art of organizing and directing men, and of controlling the forces and materials of nature for the benefit of the human race". This definition or description aptly expresses the countless services rendered to mankind by the engineering profession of today. Keep them before you as an ideal to be daily realized. Your training in accuracy, thoroughness and achievement will make you good citizens, and will suggest your leadership in the community whenever practical problems have to be dealt with. More and more you will fairly be expected to help solve the moral and social problems with which the world will be confronted when the period of reconstruction at last arrives. Civilization and engineering have developed side by side; engineering has been civilization's handmaid. Be more than mere engineers, be cultivated men, and you will be still greater engineers. Civilization is not to be tested merely by advances in mechanics; these may only produce its ill-used playthings, alas! but "by developments in the intensity and depths of man's thoughts concerning humanity. It exists in the head and the heart, or not at all; and it is esteemed in proportion as man's susceptibility to beauty and truth and loving-kindness increases or declines".

Don't be unmindful of "the old School"—I know you cannot forget her, nor the University of which she is a most important part. Whenever you can, lend them a helping hand. They are yours. God speed you, and make you good builders of your country, of a better world, and of the Kingdom of God!

H. J. Cody, *President.*

THE DEAN'S MESSAGE FOR "TRANSACTIONS"



As the end of the session approaches, a reflection may justifiably be entertained by the great number of engineering students in this University who have pursued their studies faithfully and well amidst the distractions of war that they have passed an important and significant milestone in their professional careers.

It has been a year of adjustments. For obvious reasons it has been necessary to make changes—changes that while always keeping in view the long-range professional interests of the student body, have brought some definite contribution to the cause of national self-preservation. Inconveniences have had to be borne. One cannot expect ultra-smoothness of operation when quarters are congested, when the staff is overloaded and depleted by absence on war service. That city which is characterized by faultless and undisturbed pavements is not necessarily the most prosperous or progressive one. The common aspersion cast upon growing American communities to the effect that the particular type of pavement that is best is the one that can be torn up easiest is essentially a tribute to vitality and progress.

A special satisfaction is permissible in being allowed to pursue the study of engineering at this moment. There never has been a time when the importance of the work of the engineer was more generally recognized, and never has there been a more

insistent call for his services. Employers are experiencing the greatest difficulty in meeting the demands for technically-trained personnel and the consciousness of being able to contribute to the supply ought to be gratifying to every student in the Faculty of Applied Science and Engineering.

Engineers, no less than trained workers in other fields, should, of course, recognize that however important their work may be it does not represent the sum total of effective human activity. Those unduly vocal members of the profession who represent that the engineer can do everything, and that he is the only one who can, make themselves ridiculous. The world moves on due to the combined efforts and contributions of workers in innumerable fields. Engineers represent a class that is essential for certain tasks but cannot be expected to displace those who are especially trained to serve in other fields of activity. It can only do harm to set up the concept of the engineer as a superman who knows more about economics and finance and government than those who have spent long years in public affairs or the public service and have special knowledge of how to get things done effectively and speedily in a democracy.

Engineering students in all years should never lose sight of the fact that four years at college does not produce a finished engineer. As John Galbraith, the first Dean of the "School", never ceased to point out, the best that an engineering college can do for a young man is to teach him how to find his way about in the literature of his profession and learn things for himself. The great Dr. Arnold, of Rugby, observed: "I am increasingly convinced that it is not knowledge, but the means of gaining it, which I have to teach."

It is perhaps, on the whole, better for a young man just entering upon the study of engineering to seek employment before or after graduation in a variety of fields. Moving about is much easier in early life than when one has acquired responsibilities and obligations that necessitate an assured income and a measure of stability. Moreover, specialization, which is often associated with a fixed position, is best not embarked upon until the student has had an opportunity of observing the characteristics of engineering practice in more fields than one.

There is no doubt whatever that the long-run employability of young men is greatly increased through having had the advantages of a university education. President Compton, of the Massachusetts Institute of Technology, has pointed out that a

college graduate has seven times the chance of reasonable success that a non-college man has, and a good engineer has an even greater chance than a graduate from other courses.

Whether those who read this be on the first rung of the professional ladder, or have progressed far upwards on it, this consideration ought never to be overlooked: you are already a representative, though perhaps a modest one, of the engineering profession. So conduct yourself that the most mature members of the profession will regard you as a promising recruit. No intolerance or arrogance should arise out of the fortunate position in which you have been placed through being able to pursue the study of engineering in a great university; neither should there be any shrinking or excessive self-effacement. Your bearing should be that of a coming young professional man, and your conversation should be that which might properly be expected of such. It is no sign of affectation to speak good English, free of the easily debased currency of slang. Your ability to represent someone or some cause well will have a vital influence on your eventual success.

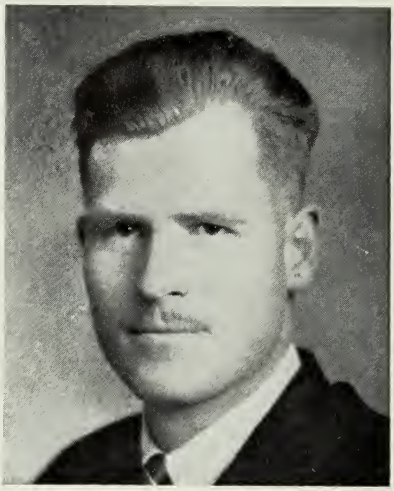
Engineering students need particularly to realize that engineers are too often disposed to lay undue emphasis on cold, hard, lifeless facts. As has been appropriately indicated by Henry A. Wallace, Vice-President of the United States,

> "The engineer sometimes imputes a value to precise mathematical reasoning that it does not always have. There is such a thing as life, and the mathematics of life is as far beyond the calculus as the calculus is beyond arithmetic. . . . It seems to me that the emphasis on both engineering and science in the future must be shifted more and more towards the sympathetic understanding of the complexities of life, as contrasted with the simple, mathematical, mechanical understanding of material production."

C. R. Young,
Dean.

February 23rd, 1942.

THE PRESIDENT'S MESSAGE



It is with a keen feeling of regret that I write this last message to you. Regret, because it marks the termination of my active connection with the Engineering Society, and because, in common with the other men of fourth year, I dread the prospect of leaving behind the happy companionship that we have enjoyed these past four years. But, mingled with these feelings, is a sense of satisfaction. From year to year as we progressed, we have seen School become larger, more prosperous, more successful, and it gives us pleasure to think that we, in some measure at least, have made our contributions to her achievements.

This year has been very outstanding. Your executive has taken every precaution to avoid the upsetting incidents that have with hardly an exception marked the past history of School. Some may say that School is degenerating, and harken back to the "good old days" but this is not true. Schoolmen, instead, are turning to new ideas, and using their abilities to perfect those which have been handed down to them. This has been well illustrated during the past year and let us hope that it continues in the future.

We were welcomed back to school by a new dean. Dean Young has brought honour to our Faculty by being the President of the Engineering Institute of Canada, and by his fluent tongue when the guest of honour and speaker at dozens of meetings during the past few months. He has put himself out on many

an occasion to help the Engineering Society and is in no small way responsible for the success of this year.

This year we had three excellent Society affairs. To begin with, for the first time in history, we had to stop the ticket sales for School Dinner due to Hart House's limited capacity of six hundred. Wing Commander "Tommy" Loudon was warmly welcomed back to School. His talk was most inspiring and left us all something to mull over.

The School At-Home passed all records for ticket sales. We aired our terpsichorean fancies to the rhythm of Bob Shuttleworth's orchestra. Bob did an excellent job. The floor show was quite good. Due to the generous purchase of war corsages, two hundred and thirty-six dollars was realized to aid the Salvation Army's War Canteen Fund.

As usual School Nite went over very successfully. O. K. Smith really worked on the revue and from what we hear it was the best in years. The Modernaires supplied the thrills and let the boys and girls know how they stood.

For the excellence of all these events we are very greatly indebted to Bob Gundy and his hard working committee. They really worked hard to put things over and deserve a big hand.

Pete Rogers in conjunction with the Club Chairmen went all out to obtain us good interesting speakers for our general meetings. It will be some time before we forget the Mirrophone returning our *Toike Oike* to us or the accuracy of the oxy-acetylene cutting tools. The film showing the manufacture of the Wright Cyclone Aeroplane engine was very entertaining and educational.

The Athletic Association under the capable direction of Herb Barrett has brought near the T. A. Reed Trophy again. Things looked bad at the beginning of the year when "Mac" McCutcheon announced the new point system but the ingenuity of the members of the Athletic Association soon overcame this difficulty and it looks like School is going to shelter this coveted honour for the fifth consecutive time.

The year executives have done an excellent job representing their years on the Society. Pete Rogers put over the elections in his usual smooth and thorough manner. And the Grad Ball—just ask anybody who was there. Bill Moeser, Jack Ward, and Jack Stafford have kept your affairs in excellent shape and have certainly given you your money's worth in dances. Jack Ward must be congratulated on his fine work handling the Noel Barr Fund.

Jim Cawley, ably assisted by Misses Lowry and Spencer, has operated the store in a most business-like manner. The rate of profit was materially reduced to allow a stabilization of the increased prices due to the war. We were sorry that we were unable to supply the freshmen with all their needs. Steps have been taken to insure the early arrival of goods for next year.

At this time I would like to thank all the members of the Engineering Society Executive for their very fine co-operation. They have all worked hard and conscientiously and that, together with their interest, has carried the Society over the rough spots during the year. I would also like to thank Dean Young, Professor W. J. T. Wright and Professor W. M. Treadgold for their wise counsel on numerous occasions. The *Transactions* and *Toike Oike* Staffs are to be highly commended on their literary efforts in putting into print the news and general noteworthy items concerning the Faculty.

In closing I might say that I consider it a great privilege to have been your President. I wish the best of luck to Jim Cawley and his incoming executive and hope they have a successful and active term of office.

W. F. Brundrit.

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Engineering Society

THE UNIVERSITY OF TORONTO

ENGINEERING SOCIETY MEETINGS

October 21st—

The first General Meeting of the Engineering Society for the 1941-42 session was fittingly opened by our new Dean, C. R. Young. A large turnout of the undergraduate body was there to meet the new Dean and to hear his address on the subject, "The Training of An Engineer."

November 18th—

Once again the Engineers were privileged to listen to an active member of the Bell Telephone Company, namely, Mr. George L. Long. Mr. Long won great interest and appreciation with his demonstration of the "Mirrophone".

January 29th—

The first meeting of the second term was addressed by Mr. W. A. Duncan of the Dominion Oxygen Company. His subject, "Oxy-Acetylene Flame in Welding", proved to be most interesting to an Engineer. With the aid of motion pictures Mr. Duncan showed the whole process of welding by means of the oxy-acetylene flame and pointed out its several advantages over other types of welding.

February 9th—

Mr. A. H. Brampton of the "Ontario Hydro Electric Power Commission". With the aid of motion pictures, Mr. Brampton's address on "220,000 Volt Transmission System of the Ontario Hydro", was of a very practical nature and was particularly well received by the Electrical and Civil undergraduate engineers.

February 19th—

The Engineering Society Executive Committee is to be congratulated upon obtaining a representative from The Wright Aeroplane Corporation. A sound film on "Wright Builds for Air Supremacy" was presented to the undergraduates. The enthusiasm and interest demonstrated over this most appropriate film was an indication of how much the undergraduate engineers appreciated this type of topic in these days of war.

February 25th—

The annual "Election" meeting was held during which nominees for office presented themselves and their claims as to why they should be elected to their prospective offices.

AFTER GRADUATION—WHAT?

By Geo. B. Langford

Many years ago the people of this country decided that in the best interests of the nation there should be created an educated class of its citizens, so that there would be available a trained group of men from whom the spiritual, intellectual, and political leaders might be chosen. To accomplish this, schools for the teaching of higher education were formed, and from a humble beginning, where the emphasis was on theology and the humanities, have grown the colleges and universities of today, which embrace in their curricula all the many subjects that have arisen in a very complex civilization. This complexity of university education has brought about a profound change in the outlook of both the teachers and the students, so that today much emphasis is laid on training for private career, and little on training for a public career, in the service of the country.

Let us glance further into the fundamentals of this institution wherein you have spent four pleasant and profitable years. A university is made up of a material part, which comprises the buildings and equipment on the campus, and an abstract part, which embraces the minds of the staff and graduates. The latter is bound together by a bond of intellectual kinship, and constitutes the real and living university. Your leave-taking from these Halls, therefore, will be in a bodily sense only, for mentally you can never be parted from your Alma Mater. Something of you has become a part of the university and in return something of the university has become a part of you. You who are about to graduate form another link in a long chain of graduating classes—a chain which binds together into a great company the thousands of men and women who constitute the Alumni of the University of Toronto—a vital and living part of the University.

You are the fortunate heirs to a legacy of long standing. The education which you have received has evolved from the combined efforts of many men over many years. In addition the people of Ontario have contributed annually, four times the amount you have paid towards the upkeep of the University. They have done this gladly because they have confidence in you —confidence in your ability to benefit from your years of training—confidence in your appreciation of the opportunities which this training has made possible—confident that you will acknowledge the debt which you now owe to society by devoting at least a part of your talents to the interests of the country rather than devoting them entirely to private enterprise.

Your lives thus far have been relatively orderly and regimented, whether you will freely admit it or not. You have been going to school for the past 15 odd years. The progress you have made has been by definite steps through primary and secondary schools and finally through university. During each of these steps you have had a definite objective—first it was to pass the "entrance", then it was to matriculate, and finally it was to graduate. You have been moving in a planned atmosphere all of your lives, and always there has been a well defined goal towards which you have worked. When you leave the university this Spring, all this will be a thing of the past. You are about to go through the greatest metamorphosis of your life. From now on any planning and ordering of your careers must be of your own doing. If you do not plan and work towards some objective you will be like a ship without a course to follow. This does not mean that you should set an irrevocable course for your whole life and stick to it through thick and thin. Few are so constituted or situated that they can see far enough ahead to do that. What you can do, however, is to set an objective a short distance ahead and when you have reached it, set yourself another. In this way you will make progress in whatever line of work you may follow, and you will avoid the pitfalls of stagnation and mental backsliding.

Another phase of the metomorphosis is perhaps not so obvious but is equally important to keep in mind. Until now you have been surrounded by teachers, disciplinarians, and advisers who have played an important part in your having reached this far. In your passage from primary school on through university the duties of these mentors have changed in the direction of granting you an ever increasing measure of freedom. Now you will escape from them, but from now on you will have to be your own teacher and disciplinarian, and to an ever increasing degree your own adviser.

You will probably ask, "Why do we have to plan our lives, teach ourselves, and discipline ourselves? We have been working for 15 years to get to a point where such things would be behind us." Unfortunately, or fortunately, we can never get away from this trio of responsibilities. A proper balance between our activities and our responsibilities is essential for a satisfactory conduct of our lives.

Your education during the past four years has been chiefly along the lines of fitting you to become an engineer. You have been supplied with certain mental tools and taught something of how to use them. You will now go forward and become proficient in the use of these tools, but do not become so

wrapped up in them that you become their slave rather than their master. Develop your minds along lines other than that of your immediate jobs; look out onto broader horizons so that you may develop a proper philosophy of life and an appreciation of the relative importance of your sphere of activity to that of your fellows. The desirability of broadening one's educational background is something that comes home to every engineer sooner or later. Sir Robert Falconer, the former President of the University, when addressing our graduating year made a remark to the effect that an educated man is never at a loss to entertain himself. This is a useful yard-stick for self-analysis, to determine whether or not you can be considered an educated person.

You will soon be engaged in the serious business of earning a living and taking the first steps along the roadway of your career. Before you advance beyond the first step on the upward climb you must learn to accept responsibility. Every job that is assigned to you, whether large or small, should be a challenge; first to your ability, and second to your sense of responsibility, to see the job through and completed. Until you have demonstrated your ability and desire to do minor tasks well, you will not be trusted with large ones. I have seen young engineers performing their tasks in the manner in which laboratory work is too often done, i.e., turning in a mediocre effort in the expectation that any errors would be found by the instructor. Never allow any piece of work to go through your hands that is incomplete or that does not represent your best effort. Every task that you do is a personal representative and salesman for you.

In the introductory remarks I mentioned service to the country. In these days this is very real, and to many it will take the form of active service in the navy, the army, or the air force. Those who will be fortunate enough to participate in this glorious experience will, I am sure, acquit themselves after the best traditions of those who went forth from this University a quarter of a century ago. Nothing finer can be said of anyone. Those who will serve in the army of industry will also have a heavy burden during the remaining war years. Not only must you supply our armies with weapons, but while our armed forces are maintaining for us the right to retain our democratic institutions, you must see to it that these institutions do not become corrupted either by misuse of power or by subversive activities.

To you all in the post-war years, do not do as we did after the last World War. Do not, by your apathy to the affairs of government, allow the world to slide back again to the brink

of chaos. The task of directing the affairs of this country will be one of the greatest that Canadians have ever faced. Do not shirk your duty. The experiences of the past 20 years have proved the futility of putting personal interests above those of the State. Had the world devoted itself first to national and international affairs, and second to personal interests and gains, the stability of the former would have guaranteed the preservation of the latter. At present, we in this hemisphere still have the latter, but we have no guarantee that we will be left in possession of them because of the instability of national and international affairs. The world which you will live in will be largely of your own making. See to it that everyone makes his contribution.

And now au revoir, and the best of luck!

ON THE SPINNING OF THE MONOPLANE

By C. B. Livingston

Second Prize Paper delivered at the joint meeting of the Engineering Institute of Canada, Toronto Branch, and the Engineering Society of the University of Toronto, January 15th, 1942.

Since safety is, or should be, the ultimate goal of the designer, the elimination of all possibility of the inadvertent tailspin from any aircraft would represent a great step towards this end. It follows naturally that more research work has been carried out on the spinning motion of the aeroplane than on any other manoeuvre, the normal flight case excepted. Many have ridiculed this extensive study of the prolonged spin, but since the accidental spin is still a definite possibility (such as might develop in the clouds), this ridicule seems to have its origin in the minds of those to whom the spin is a mystery.

If the exact qualities or design characteristics of any aircraft which produce a machine of bad spinning characteristics could be tabulated for the aeronautical engineer, one of the highest steps towards the desired aim would have been climbed. Unfortunately, due to the vagaries and complexities of the spin, this is impossible. It must not be supposed that the production of the unspinnable aeroplane is impossible. It is not. But, due to the demands of performance, manoeuvrability and stability, it is economically impracticable.

The solution is confined to the production of:—

(1) Aircraft which should never be spun (heavy service and civil machines).

(2) Aircraft which should be readily recoverable from the spin (comparatively light machines).

Two conjoint problems, therefore, are presented. Firstly, the forces and moments during a spin must be calculated, arithmetically or otherwise. Secondly, control surfaces, for proper recovery characteristics, must be designed to provide the suitable moments for recovery. It is intended to limit this discussion to the design treatment of the control surfaces.

The spinning motion of an aircraft is that of a corkscrew of coarse pitch, that is, the centre of gravity of the aeroplane traces a helix on the surface of an imaginary cylinder.

During the 1910-14 era, there were only two accidents due to spinning. With the advent of the Great War and the consequent increase in activity of the aeroplane, accidents became more numerous, due primarily to the shortening of the fuselage.

It was not until 1919 that Baristow suggested that this motion might be analyzed experimentally. On this suggestion R. McKinnon Wood built the first vertical spinning tunnel. H. Glauert advanced his theory as a resolution of the problem, but as with many an advanced theory, it was not universally accepted until some years later. Major F. W. Gordon performed the first voluntary full-scale flight tests at Farnborough in the early twenties.

Modern methods of study are four-fold. The first and most obvious method is that of full-scale flight tests. Though risky and expensive, this provides the most accurate results. The troublesome factor, aerodynamic scale effect, is absent. The results of such a test are applicable only to the particular machine under test and may not be generalized.

Secondly, dynamically balanced models may be examined during flight tests. The expense of these models and the tedious subsequent calculations nullify any advantages possessed by this branch.

Thirdly, the elementary strip method, used frequently in many engineering problems, may be applied to the spinning motion. Monotonous determinations and unreliable results cause its disfavour among investigators.

Man, being naturally economical, seeks another method, and discovers the solution in the wind tunnel study of rotating models. Although comparatively easy to perform, this method is hampered by scale effect, that factor which prevents the coincidence of full-scale flight test results and those of model tests. Because of this ,any wind tunnel results on spinning must involve some margin of safety to account for the aerodynamic scale effect.

Although different, these four methods all point to one fundamental conclusion, and that is that as far as recovery is concerned, the yawing couple is all-important. In other words, the design of the tail unit assumes precedence in the study of spin.

A discussion of the various parameters, upon which the design of the tail unit is dependent, brings to light several points which should bear prime consideration during the design of a new aeroplane. Three in number, these variables are:

(1) The tail length (L_t) which is defined to be the distance between the centre of gravity of the aircraft and the hinge line of the elevators.

(2) The location of the vertical surfaces (fin and rudder) with respect to the tail plane.

(3) The vertical location of the tail plane on the fuselage.

Firstly, consider the effect of variation of the tail length. As was found accidentally in 1914-18, a shortening of this dimension produced very bad spinning characteristics. This was, and still is, the result of a decrease in the aerodynamic yawing moment arm, or a decrease in the main spin- controlling moment. Conversely a lengthening of the tail length introduces a comparatively safe machine (from a spinning standpoint). That the tail length is an important factor is evidenced in modern aircraft. A short machine (Republic P-43, for example) has a widely different tail unit than that of a longer aeroplane (Curtiss P-40, say).

The second parameter, the horizontal location of the fin and rudder, is perhaps the most important. Experimentally it has been found that the accessory of spinning is a fin and rudder unit directly above the tail plane. In this position the shielding of the fin and rudder (the main source of that important yawing moment) by the tail plane is a maximum. Forward or retrograde movement of the vertical surfaces are beneficial from the standpoint of recovery. Consequently few aircraft have both their fin and rudder directly above their tail plane.

The most detrimental vertical position of the tail plane, the third factor, is the lowest extremity of the fuselage. Any upward movement of the stabilizer is advantageous due to the consequent increase in the unshielded vertical side area at the tail, a secondary source of the controlling yawing moment.

Once again the importance of the proper design treatment of the tail unit is emphasized. Upon the resulting unit depends the spinning characteristics of the given aeroplane.

Thus the ultimate goal, the elimination of all possibility of the incipient spin from any aeroplane must be sacrificed for the seemingly more desirable performance characteristics. In its place the assurance of complete controllability of the spin is substituted. But that main desideratum of the aeroplane—its absolute and unconditional safety—is still wanting.

ENGINEERING STUDENTS AND THE WAR

By Professor G. R. Lord

There is little doubt that this is very much an engineers' war. One hears of mechanization and technical development on every hand. To a greater degree than in the last conflict, the tools of war are being developed and produced at phenomenal speeds. This is to be expected, since the dire necessity of this war demands the utmost effort on the part of every one. Machines and processes must now be developed regardless of cost and, once having been produced, will be available when peace comes, if found to be necessary.

If the war lasts but a few years longer, it will leave a world which will be industrially vastly different from the one which we knew before. We can be very certain that all the discoveries and developments for war will not be abandoned in peace. For example, the lessons learned through the production of Flying Fortresses should mean that thousands of commercial, passenger and freight carrying planes will be at the service of a decidedly air-minded world. If this be called an engineers' war, the ensuing peace must surely bring a time during which the engineer will be required to assume ever greater responsibilities. Therefore, if we could look beyond the present dark cloud, we would surely agree that much will be required of the engineer of tomorrow, who is the student of today.

However, it is not the future which largely concerns us now, it is the immediate present, and what is expected by the nation from us as students. Perhaps we can best answer this by quoting parts of a letter from a professor in one of the English universities, written to one of our own staff members. This university in England has had many of its buildings bombed, and much of its work must be accomplished under difficulties. Regarding the quality of instruction, the letter states: "We are definitely maintaining the standard of the courses—or trying to. In certain cases, if the work has suffered due to a blitz, etc., a lower standard, of necessity, must be accepted and the course curtailed somewhat; but while we shall, in marking, give every consideration to the stress of external circumstances, we are doing our best to make the degree worth having." Those words sum up, briefly and clearly, the attitude of the staff in an engineering college in England regarding their part of the job. He then has this to say about the students' obligations: "Our attitude is that, if a man is granted the privilege of coming to the University in wartime,

he has got to put up a good show both in his work and in the small amount of military training imposed, so that on leaving he may be of real value to the country, while the granting of a degree will carry the distinction it deserves and not bring the University into disrepute by flooding the country with a lot of half-trained men." These are brave words from a University carrying on under the constant threat of bombings. They apply even more to our situation, since no obstacles, except those imagined, have as yet impeded our work.

In time of grave emergency there is always some pressure exerted toward having engineering courses shortened and intensified. It requires courage and coolness to carry out tasks thoroughly and not be stampeded in time of war. After Dunkirk, the Royal Air Force might have yielded, quite pardonably, to the temptation to rush through their training and fill the English skies with thousands of fresh, raw recruits, instead of which they maintained their high standard of pilot selection and training. The wisdom of having pursued such a course has already been manifested by deeds which have contributed worthy pages to be added to the annals of British history. If the Air Force cannot afford to develop inadequately trained personnel, neither can the country afford to accept poorly trained engineering students at this crucial time.

Up to this point in the discussion, we have spoken mainly of training and effort. In peace or war there is a further attribute without which an engineer cannot make a worthy contribution to the work of the nation. This essential requirement combines courage, imagination, inspiration and high ambition—in short, it is character. Possessing these things, we will bend to the tasks before us with a will, knowing that our greatest contribution is to do our own job so thoroughly, that we will be equipped to discharge well whatever tasks may be presented to us.

PRE-STRESSED REINFORCED CONCRETE

First Prize Paper delivered at the Joint Meeting of the Engineering Institute of Canada, Toronto Branch, and the Engineering Society of the University of Toronto on January 15th, 1942.

By W. S. Glynn

The subject to be treated here is "Pre-Stressed Reinforced Concrete". It is well known that reinforced concrete is used in the construction and fabrication of structures and structural members the world over. However, in the failure of such structures or structural members, very seldom does the steel reinforcing ever fail. Most often, the concrete is the material which fails first, usually in tension. In the search for a better and more economical combination of steel and concrete, the theory and application of pre-stressing were employed.

It is understood and accepted that steel is stronger in tension than in compression and that concrete is much stronger in compression than in tension. A logical way to improve the combination of these two materials is to increase their strength and properties. Through the application and practical utilization of pre-stressing, this has been done. Two men who have spent a great deal of time and effort studying and experimenting with the principles of pre-stressing are E. Freyssinet and W. S. Hewett. Freyssinet is a Frenchman who has applied the principles of pre-stressing many times in European practice. Hewett is an American who has patented a process of constructing water storage structures in the United States, and in this process he employs pre-stressing. This treatment of the subject of pre-stressing is divided into two parts, a long one and a short one. A short description of the Hewett System will be given first. Then a more detailed account of the results of E. Freyssinet follows this.

PART I

In the design of structures subject to internal pressure in the United States, Hewett uses initial tensile stresses in the steel reinforcement in order to induce initial compressive stresses in the concrete of the walls of these structures. However, this is not entirely revolutionary. Engineers have used initial stresses for many years before Hewett started to design water tanks and other structures subject to internal water pressure. An example where initial stresses were used is in the construction of steel frames with vertical columns, horizontal struts and adjustable diagonal sway rods. By adjusting these sway rods to a definite initial tension for a given horizontal load, the horizontal deflection of the frame may be reduced by as much as one-half without introducing additional stresses in any member due to the initial stresses in the sway rods.

Briefly, the Hewett System of building circular structures to be subjected to internal pressure is the introduction of predetermined and measured initial stresses in order to eliminate shrinkage stresses, to avoid tension in the concrete, and to make the steel reinforcement available for the effective resistance of temperature stresses. For example, in tank production, the circular wall is built first without any steel band-reinforcing. This eliminates shrinkage stresses since the concrete in the wall is free to shrink without stress. The band steel required to counteract the internal pressure is then placed and adjusted to a predetermined and measured initial stress. This stress is of such a value that there results the desired stress in the steel and zero stress in the concrete when the internal pressure is applied. The band steel consists of round steel rods about two inches in diameter and about thirty or forty feet in length with left and right rolled threads at their ends. Turnbuckles are used to connect the rods into a continuous circular unit, and the stress (initial tension) is effected by turning the turnbuckles with levers which move downward.

Hewett also employs the principles of pre-stressing in the construction of dome slabs and shell roofs, in reinforced concrete water pipe and in many other types of structures. The fact that most large water tanks, stand-pipes and reservoirs in the United States were built under the Hewett System of design is not surprising when one considers and understands the advantages obtainable and the savings in material capable of being effected. Certainly, structural soundness is assured, and architectural beauty is possible.

E. Freyssinet is the originator of the theory and practical utilization of pre-stressed concrete construction in Europe. He spent a great deal of time in improving the quality and in increasing the strength of the concrete he used. Also, he experimented with the treatment and manufacturing processes of steel and concrete in order to obtain a better and more economical combination of these two materials.

He made a reinforced concrete pipe of internal diameter about seventeen inches and of thickness about 1.375 inches. It was vibrated, and thus far would have been a very well made pipe of ordinary reinforced concrete which would have started to ooze under an internal water pressure of about 125 lbs. per square inch., fissures appearing and increasing rapidly. Also, the leakage which would have resulted would continue even when the internal pressure was greatly reduced. However, after the vibration, the concrete of this pipe was subjected to a pressure of 2,000 lbs. per sq. in. which induced in the steel reinforcement

a permanent tension of between 170,000 and 185,000 lbs. per sq. in., counterbalanced by a permanent compression of the concrete of about 7,000 lbs. per sq. in. Then it was shown that this "treated concrete" pipe would withstand, before oozing, an internal pressure ten times greater than that which would cause an ordinary reinforced concrete pipe of highest quality to give way. Also, although fissuring occurred in this "treated" pipe under high pressures, it was found that the fissures closed as soon as the head pressure was slightly lowered. Furthermore, owing to the molecular activity of the concrete, this pipe was as good as new in a week or two.

Other experimental results, equally as surprising and remarkable, were obtained. It was found possible with good aluminous cements and suitable aggregates to obtain concretes with a strength of over 14,000 lbs. per sq. in. within two or three hours after setting had begun. Similar results were obtained after 12 to 24 hours with ordinary cements. Also, the speed of the hardening process of vibrated and compressed concretes, when heated up to about 212° F. was increased considerably; in fact, the hardening process became almost instantaneous. Therefore, it was quite easy to reach values of compressive strength for concrete between 17,000 and 21,000 lbs. per sq. in.

This increase in strength of concrete requires also an increase in strength of the steel. Special steels with a tensile breaking strength of 140,000 lbs. per sq. in., the elastic limit of which can be raised to over 110,000 lbs. per sq. in. by simple cold drawing, can be purchased at a cost very little greater than that of ordinary reinforcing steel. By processes of hardening, annealing and further cold drawing, the elastic limit can be raised to between 185,000 and 195,000 lbs. per sq. in. The steels used almost exclusively in practice at the present time have elastic limits between 35,000 and 40,000 lbs. per sq. in. However, the use of steels with high elastic limits in ordinary reinforced concrete design does not increase the economic practicability of the combination by very much since the concrete is the so-called "weak sister" of the two materials involved.

A good utilization of this concrete and steel of high resistance strengths implies for the steel that the extension of the concrete be maintained within the range of the usual practical limits. For the concrete, it implies that the total tensile stresses be kept well below those stresses which would cause failure of the concrete in tension. These conditions are satisfied if compression is induced in zones where tension is produced by the load, and if tension is induced in the zones where compression results from the load.

One of the many advantages of Freyssinet's method of using pre-stressing is the complete elimination of permanent fissures in the concrete. Another advantage is the provision of considerable resistance to repeated stressing. Consider an example where pre-stressing is used to resist repeated-stressing. Two telegraph posts, each 40 feet long and each fixed over a distance of 6′ 7″ from the base, were subjected to alternate stressing. In post (A), the concrete was pre-stressed; ordinary reinforced concrete was used in post (B). Post (A) was five months old, post (B) eighteen months old; the quality of the reinforcing steel was the same in each post. A total pull of 2000 lbs. was used, — 1000 lbs. at the rate of eight times per minute during the test. At the beginning, the deflection of post (A) was one-half that of post (B). Post (B) fissured considerably after a few hundred alternate deflections, and failed completely after a few thousand. Post (A) was subjected to 500,000 alternate deflections without failure or even alteration.

Another example of the use of pre-stressing is in the manufacture of pre-cast girders, several thousands of which having had to be delivered on short notice in Paris, France, a few years ago. The overall length was 17′ 3″, the effective length 16′ 3″, and the depth 19.7 ins. The width of the flanges was 11.8 ins., the thickness being 4.5 ins. throughout. The web was 8 ins. thick near the supports, and it tapered gradually to 4 ins. at one-quarter of the span, the central part being constant in thickness at 4 ins. The steel reinforcement in the lower flange consisted of 20 wires of hard steel, 0.20 of an inch in diameter. Mild steel reinforcement was used in the upper flange and in the web. The hard steel wires of the lower flange were not provided with hooks or any other such form of special anchorage. The concrete was a 1:1½:2½ mixture. The live load corresponded to a single concentrated load of 16.3 kips acting at mid-span.

The steel in the lower flange was pre-stressed to a predetermined value, and this tension was maintained in the steel until the concrete had become sufficiently hard to withstand the induced compressive stress of 1,250 lbs. per sq. in. This is the value of the compression which is induced in the concrete when the tension load on the steel is released. When the tension was released, the steel rods shortened and swelled. This swelling exerted a considerable pressure all around on the concrete which both theory and practice have shown to be amply sufficient to supply the required bond. Therefore, anchorage was not necessary. Owing to the elastic deformation of the concrete under the compression to which it was subjected by the shortening of the steel rods, the tension fell gradually from 166,000 to 149,000

lbs. per sq. in.; this is the value of the tension in the steel which produced the compression of 1,250 lbs. per sq. in.

Since a large number of these girders were required on short notice, a fast and economical method of fabrication had to be devised. A working platform about 41 feet wide and 498 feet long was constructed on which nine rows of 28 girders could be accommodated at one time. The reinforcing rods extended continuously along the moulds of the 29 beams in a row so that only one pre-stressing operation was required for 28 beams at a time. Using special equipment, through which hydraulic jacks acting at one end stressed the steel to the required amount, strutting plates were used to maintain this tension so that the jacks could be removed and used elsewhere. When the concrete was sufficiently hard to take the compression of 1,250 lbs. per sq. in. without slippage occurring along the rods, the jacks were again used to remove the strutting plates.

A test was carried out on one such girder. The normal live load was equivalent to a concentrated load of 16.3 kips at the middle of the span; a deflectometer was used to measure the deflections. The first capillary cracks in the lower fibre were observed under a load of 30.6 kips; this is 1.88 times the value of the normal load. When the load was removed, these cracks also disappeared. Similarly, greater loads were applied. Under a load of 36.2 kips, the deflection at the centre was only one part in 650 of the span. More cracks appeared under a load of 50 kips, and the resulting deflection at the centre was out of range of the deflectometer. However, when these loads were removed, the cracks disappeared. It is an astonishing fact that a girder, so near rupture as it was then, still displayed evidence of being such an elastic body. Finally, the load was increased to 52 kips when the concrete of the upper began to show signs of crumbling; hence, the test was ended. This is certainly a strange result. Who ever heard of the concrete in a beam or girder failing in compression before it failed in tension? These pre-stressed girders proved more economical than steel girders, and the saving in weight of the steel reinforcement over ordinary requirements in concrete design was about 70%.

Freyssinet employed these principles in many other types of construction. One of the outstanding achievements of pre-stressing was in the manufacture of piles to be used in supporting the foundations of the Marine Station at Le Havre, France. The construction work having been completed only a short time, it was observed that the building and foundations were sinking at the rate of about one-half an inch per month. After a short deliberation and preliminary investigation, Freyssinet undertook

to stop this sinking which would have caused the failure of this structure had it not been detected and remedied. Eight months after his decision to undertake this important task, Freyssinet succeeded in stopping this sinking at the most dangerous places. He employed cast-in-place piles as long as 100 feet, and he utilized the principles of pre-stressing in their construction.

The results of these types of construction are astonishing, but quite comforting. There is no doubt in the minds of those who understand and appreciate its significance that pre-stressing has merited a definite place in reinforced concrete construction. However, it is understood that one cannot expect contractors to employ pre-stressing every time they place reinforced concrete. At first glance, when one reads Freyssinet's articles in periodicals describing his achievements, or English adaptations of these articles, to be more precise, and when values of compressive strengths of concrete of 17,000 to 21,000 lbs. per sq. in. or values of elastic limits of steel of 185,000 to 195,000 lbs. per sq. in. are cited, one could justly suspect that this was happening in the 25th century. However, on further perusal and enquiry, one will discover that this is quite possible even in the 20th Century.

A concise and accurate summary of this paper is in order. If the reader can remember only two simple ideas, having read this paper through once, then the purpose for which this account was written will have been more than fulfilled. Firstly, W. S. Hewett in his Hewett System of design pre-stresses the steel band reinforcing in tension when the concrete, having only been poured a short time (about 12 to 24 hours) has sufficiently hardened to with stand the resulting compression. Later, when the tank is filled with water, this pre-tension has been so calculated that there results the desired working stress in the steel and zero stress in the concrete. Secondly, in the fabrication of beams and girders, Freyssinet pre-stresses the steel reinforcements in the lower flange in tension before any concrete has been placed in the mould for this beam or girder. Then the concrete is placed. When the concrete has hardened sufficiently to withstand the compression to be induced in it, the tension on the steel is released causing the steel to shorten and swell slightly. Under no load, the steel is in tension, the concrete in compression. When the design load is applied, the steel takes an increase in tension, and the concrete has no stress in it whatsoever. Although these conditions seem to be foolishly ideal, they greatly resemble the actual behaviour of the two materials, steel and concrete, in the structural material so widely adopted for structures and structural members that are expected to last for any length of time at all (up to 50 years).

RED CROSS SERVICE

Since war started in September, 1939, it has been the privilege of the Canadian Red Cross to assist many people in many ways. Through the generosity and untiring labours of the Canadian public, it has been possible to make "the sign of the Red Cross" a constant emblem of help to our gallant forces at home and overseas, to the heroic people of Britain in their bomb-shattered cities and towns, to refugees, evacuees, and many others in every phase and crisis of this war.

Upon the outbreak of hostilities nearly every city, town and village across the Dominion mobilized its forces behind the Red Cross. Over 1,000,000 adults and some 800,000 Red Cross Juniors became members, enabling the Canadian Red Cross to count approximately one-sixth of Canada's total population among its active, voluntary wartime membership. The Society has upwards of 2,600 branches with approximately 10,000 auxiliary units working with them, the whole organization embracing a great and voluntary working force of about 750,000 Canadian women.

An attempt is made below to summarize some of the work accomplished during two and one-quarter years of war:

OVERSEAS WORK:

600-bed Military Hospital in England built, furnished and fully equipped at a cost of $755,000, and turned over to Canada's Department of Defence to provide the "best" in hospital care for our Canadian men.

36 Mobile Kitchen Units purchased for Britain's Fire Fighters at a cost of $111,600—each equipped to go into bombed areas and feed 250 workers at a time.

Air-raid Victims in all sections of Britain provided with articles of clothing, shoes for children, ready-made garments, etc.

Patients in Military Hospitals were cheered and helped by Red Cross gifts of over 4,000,000 articles of supplies and comforts—a great band of Red Cross "visitors" sees to it that no Canadian patient in Britain is lonely or his needs unfilled.

Sailors' comforts and supplies were provided through substantial grants to navy and merchant marine welfare organizations in Britain.

Maple Leaf Club operated as a popular home and recreational centre in London for men on leave.

Enquiry Bureaus operated in Britain and Canada to obtain information of relatives or friends who are missing, wounded, or prisoners-of-war.

SHIPMENTS TO BRITAIN (up to December 31st, 1941):

8,729,768 articles of comforts and supplies for the Forces, Military Hospitals and Civilian Relief.

5,015,597 surgical dressings.

3,115,244 articles of relief clothing.

71,813 cases of canned goods, honey, biscuits, coffee, jam, butter, cigarettes, tobacco, etc.

232 ambulances, 9 station wagons, 3 trucks, 1 auto.

1,135 cases of Hospital Supplies, Comforts, and Relief Clothing for Allied Red Cross Societies and evacuee children.

AID FOR BRITISH RED CROSS:

$215,000 contributed to British Red Cross War Relief up to December 31st, 1941, besides large quantities of materials.

14 Utilicon Vans at a cost of $20,000.

CANADIAN WORK:

Packing of Prisoners-of-War Food Parcels, begun in 1941, reached a total of 22,500 a week, with 612,944 having been shipped to British prisoners-of-war in enemy countries by the end of the year.

Through Red Cross Volunteer Blood Donor Clinics over 1,600 donations a week are being processed into serum to be used for transfusion purposes by the forces and British civilians.

Forces in training or stationed in Canada given over 1,000,000 "comforts", and cash grants made towards hostels for use of these men.

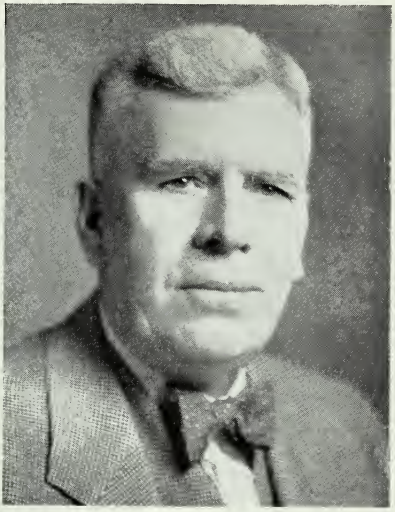
Canadian Red Cross Corps of uniformed, volunteer trained women had 2,500 members in 65 Detachments located in 45 cities at December 31st, 1941.

Disaster Relief Organizations set up at seaboards and other vulnerable points.

Extensive Peacetime Programme was maintained, including Outpost Hospitals in frontier settlements, aid to veterans of other wars, home nursing, and war emergency first-aid courses, nutritional and visiting housekeepers' services, etc.

Junior Red Cross with 27,239 branches, has a membership of over 800,000 pupils in Canada and Newfoundland. Juniors have as principles, Health, Good Citizenship, and International Friendship. In their war service, they have donated 5 ambulances, 14 mobile kitchens, and endowed a bed at a military hospital.

IN MEMORIAM



In the death on Sunday, January 18th, 1942, of Professor W. J. Smither, this Faculty lost a loyal and active member, who was always interested in its work, whether in connection with the staff or students.

William James Smither graduated from the School of Practical Science in the Department of Mechanical and Electrical Engineering in 1904, taking his Bachelor's Degree later. He went to work in San Francisco, where he was employed by a hydraulic machine company, and while there suffered an accident, which caused him to spend a long period in the hospital and left him permanently handicapped.

He returned to Toronto and joined the staff of this Faculty as a Fellow in 1911. Later on he advanced through all of the intermediate grades to that of Professor of Structural Engineering, to which he was raised in 1940.

Professor Smither was of a cheerful and sociable disposition, despite nearly constant physical suffering. He will be missed by all.

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IRON ORE

Year Book

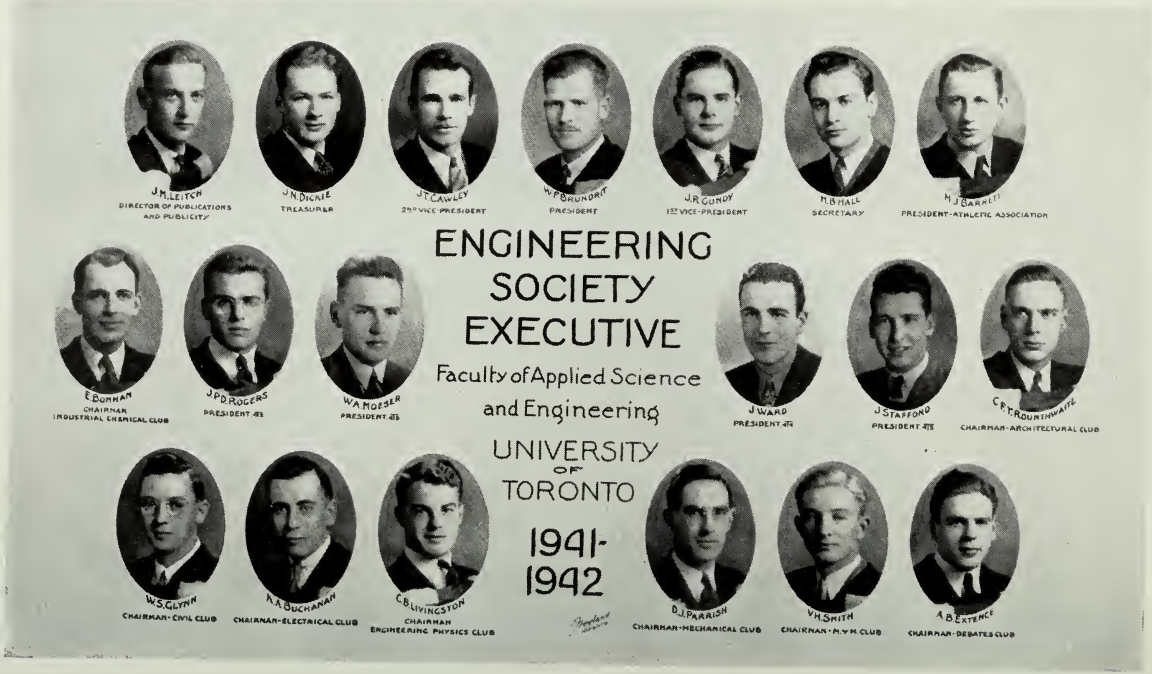
1942

EXECUTIVES, CLUBS,

SOCIAL FUNCTIONS

Engineering Society

THE UNIVERSITY OF TORONTO


J.M. LEITCH
DIRECTOR OF PUBLICATIONS AND PUBLICITY
J.N. DICKIE
TREASURER
J.T. CAWLEY
2ND VICE-PRESIDENT
W.P. BRUNDRIT
PRESIDENT
J.R. CUNDY
1ST VICE-PRESIDENT
H.B. HALL
SECRETARY
H.J. BARRETT
PRESIDENT-ATHLETIC ASSOCIATION
ENGINEERING SOCIETY EXECUTIVE
Faculty of Applied Science and Engineering
UNIVERSITY OF TORONTO
1941-1942
E. BONHAM
CHAIRMAN INDUSTRIAL CHEMICAL CLUB
J.P.D. ROGERS
PRESIDENT '43
W.A. MOESER
PRESIDENT '43
J. WARD
PRESIDENT '42
J. STAFFORD
PRESIDENT '43
C.F.T. ROUNTHWAITE
CHAIRMAN-ARCHITECTURAL CLUB
W.S. GLYNN
CHAIRMAN-CIVIL CLUB
N.A. BUCHANAN
CHAIRMAN-ELECTRICAL CLUB
C.B. LIVINGSTON
CHAIRMAN ENGINEERING PHYSICS CLUB
D.J. PARRISH
CHAIRMAN-MECHANICAL CLUB
V.H. SMITH
CHAIRMAN-M.V.M. CLUB
A.B. EXTENCE
CHAIRMAN-DEBATES CLUB

ELECTION RESULTS, 1941-42

Engineering Society Executive—

President	J. T. Cawley (Accl.)
1st Vice-President	M. J. Aykroyd
2nd Vice-President	H. Hall
Treasurer	A. P. Crosby
Secretary	J. J. Dravis

Athletic Association Executive—

President	D. E. Grosskurth (Accl.)
Vice-President	F. Sansom
Secretary-Treasurer	W. G. Henry

4T3 Executive—

President	J. N. Dickie
Vice-President	J. R. A. Prentice
Secretary-Treasurer	O. L. Turner
Athletic Representative	K. Gow

4T4 Executive—

President	J. Ward
Vice-President	K. R. VanWyck
Secretary-Treasurer	R. T. Mansell
Athletic Representative	W. W. Moffatt

4T5 Executive—

President	P. H. Aykroyd
Vice-President	E. Peacock
Secretary-Treasurer	R. F. Moore
Athletic Representative	D. Gibson

Club Chairmen—

Civil Club	G. H. Workman
Mining and Metallurgical Club	F. W. Kellam
Mechanical Club	J. M. Dyke
Architectural Club	J. A. Murray
Engineering Physics Club	J. A. G. Diack
Industrial Chemical Club	R. F. Lewarne (Accl.)
Electrical Club	P. D. Smith
Debates Club	R. E. Scott

4T2 Permanent Executive—

President	K. Kidd (Accl.)
Vice-President (2)	W. F. Brundrit (Accl.) J. P. D. Rogers (Accl.)
Secretary-Treasurer	C. B. Livingston (Accl.)

4T2 Permanent Executive, Councillors—

Department 1	W. S. Glynn (Accl.)
Department 2	W. W. Bolton (Accl.)
Department 3	W. Bland (Accl.)
Department 4	C. F. T. Rounthwaite
Department 5	R. E. Klein (Accl.)
Department 6	E. E. Bonham (Accl.)
Department 7	F. Doty
Department 8	J. H. Turner
Department 9	A. McLachlin

Bronze "S"

D. W. Marshall

GIRLS OF S.P.S.

Back Row: A. Ayer, S. M. L. Macdonnell, J. D. Taylor.
Front Row: M. L. Imrie, A. E. Rushbrook, M. J. Stewart.
Absent: A. M. R. MacCorquodale, M. Synge, E. C. Jones, Mrs. C. I. Young.

"GLAMOUR DEPARTMENT"

Of the many assets which School possesses, one in particular deserves mention: viz., that handful of femininity which, though "scarce as hen's teeth", nevertheless makes itself felt and does add mightily to the otherwise somewhat drab scenery of the "Old School House".

As in former years, two intrepid adventurers set out to interview these people, and finally ended up deciding it would be better to follow the modern trend and take a Gallup Poll — as, if, and when they could sneak up on, catch Dogpatch style, or even converse with said people and find out if their ideas of preceding years had changed or no.

As an engineer is trained to do, a plan of attack was set up, based on the foundations of preceding years; but the old applecart was upset at the start with "Well, for hevvun's sake, don't write it up like in former years". So . . .

However, no new girls have entered School this year, (have they joined the army, to let the stronger (?) sex carry on at School?) and by now most of us have seen the others so no individual description with plans for the future will be included herein as ordered. (Who says there's no censor). For those interested, personal information about these "fillies" may be gleaned from Transactions and Year Book, 1940 and 1941.

At present, registration numbers ten, comprising: Miss Martha Stewart, Miss Jean Taylor, Mrs. C. I. Young, Miss Audrey Rushbrooke, Miss Claire Jones, Miss Mary Imrie, Miss Pegeen Synge, Miss Shelagh Macdonnell, Miss "Peg" MacCorquodale, Miss Alice Ayer.

The above have ideas of world importance too, as follows:

1. Conscription for everyone according to qualification as well as conscription of wealth.

2. Engineers as compared to other male animals are A-1.

3. Favourite past time — cutting out paper dolls.

4. Reporters, for this article, should be neither seen nor heard.

NOTE: For the benefit of those who undertake this job in the future, a hint is — Start early in the fall to get your info and carry a club, a blackjack, a knife, and a box of "cigars", oops pardon me, I mean candy.

J. DICKIE.
J. GIOVANETTI.

DEAN C.R.YOUNG
HON. VICE-CHAIRMAN
MR. WM. STORRIE
HON. CHAIRMAN
W.S.GLYNN
CHAIRMAN
PROF. W.M.TREADGOLD
HON. VICE-CHAIRMAN
M.J.AYKROYD
VICE-CHAIRMAN
R.G.MAUGHAN
TREASURER
A.J.McCONVEY
SECRETARY
CIVIL CLUB
EXECUTIVE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1941-1942
G.P.TAYLOR
4TH YEAR REP.
A.F.McCOUBREY
3RD YEAR REP.
F.J.TRAVERS
2ND YEAR REP.
T.NEWELL
1ST YEAR REP.
R.UPPER
1ST YEAR REP.
Freeland
Toronto

CIVIL CLUB

The Civil Club at School has spent a hectic and irregular term of functioning (?) during the 1941-1942 academic session. Due to military training, there were only two nights on which the executive dared to hold a meeting at any time; these were Tuesdays and Thursdays of most weeks. Other complications concerning speakers, engineering and industrial field trips arose because of wartime restrictions and regulations.

However, the Chairman and his eager aides who composed the Civil Club Executive launched the Civil Club on its 1941-1942 course on October 22nd, 1941, in Hart House. This was a dinner meeting and was the occasion of the reception of the Freshmen into the Civil Club. About 110 members of the staff and student body of the club attended this meeting which started with dinner in the Great Hall at 7.00 p.m. The guests and members of the staff were introduced one at a time and without speeches. Our Honorary Chairman, Mr. Wm. Storrie, addressed the meeting for a short time after the introductions had been executed. Then the main speaker, Dean C. R. Young, addressed the men, and relayed interesting and valuable advice as to the status of the Civil Engineer in wartime. Finally, the meeting in the Great Hall was adjourned, and everyone proceeded to the East Common Room, where entertainment (?) was provided.

On October 30th, 1941, the annual field trip of the Civil Club took place. About fifty men visited the Canada Cement Company Plant at Belleville, Ontario. This trip was made possible through the kind co-operation of Mr. M. J. Breen and Mr. H. Legate, both graduates of School.

A joint meeting and smoker was held in the Debates Room at Hart House on December 4th, 1941, with the Electrical Club. Mr. M. Aykroyd, Sr., of the Bell Telephone Company of Canada, presented an illustrated lecture on the methods employed by this company in burying or laying underground and underwater cables.

Then the Civil Club Executive began to devise new and different ways and means of providing educational and social activities for its members. A semi-private Civil Club Dance was held at the Club Top Hat on January 27th, 1942, at 9.30 p.m.

In closing, I wish to thank all those who have assisted in any way whatsoever in the affairs of the Civil Club. I also extend my best wishes for success in the future to all students in the Department of Civil Engineering.

WALTER S. GLYNN,
Chairman.

F.W. KELLAM
SECRETARY-TREASURER

PROF. G.B. LANGFORD
FACULTY SPONSOR

J.W. BELL
VICE-CHAIRMAN

V.H. SMITH
CHAIRMAN

MR. L.K. FLETCHER
HONORARY CHAIRMAN

J.V. FOX
4TH YEAR MINING GEOLOGY REP.

MINING AND METALLURGICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1941-1942

R.L. LESUEUR
3RD YEAR MINING REP.

M.R. MAYNARD
4TH YEAR MINING REP.

J.H. MEES
4TH YEAR METALLURGICAL REP.

F.D. ISBISTER
3RD YEAR METALLURGICAL REP.

R.B. HOWSON
1ST YEAR METALLURGICAL REP.

I.R. CURRIE
2ND YEAR MINING REP.

J.A. KING
2ND YEAR METALLURGICAL REP.

H.S. GOODERHAM
1ST YEAR MINING REP.

MINING AND METALLURGICAL CLUB

Another year is nearly over and the exam letters seem to be the prevalent disturbance. Looking over the year's activities, we find that the club did not have a very successful year. Everyone seems to have enough to do and more, and interest in the club hit a new low. For the lack of activities I sincerely apologize.

In October an Initiation stag at the Prince George was very successful. The freshmen turned out in full force and made quite a contribution to the evening's entertainment. Bill Moffat's efforts to promote first class entertainment met with the wholehearted support and co-operation of everyone except the management. Somehow or other he got the wrong idea.

The fourth year Miners and Metallurgists made their annual trip to Orillia in December, and once again we were well taken care of. Two plants in full production, and one limited by priorities, opened our eyes in many respects. We moved down to Barrie later on, where we had quite a time, and nearly left George Warner. George was in good form that night, and by the time he had finished explaining the elements of Engineering to a brunette, the bus had left. Nice sprinting, Minty!

Then there was the M. & M. Club Dinner at the Engineers' Club on February 3rd, or didn't the other 125 members know about it? Our guest speaker, Dr. James, a prominent Geologist, gave a very good talk on the Future for Engineers. Though his talk was debatable, it was interesting, and, of course, George was in good form again, and caused no small delay. The speaker was introduced by Mr. L. K. Fletcher, a well-known Mining Engineer, who has acted as Honorary Chairman this year. Although the dinner was poorly attended, we believe that those who came really enjoyed themselves.

Thanks are due to Professor Williams and Professor Langford for their interest and efforts on behalf of the Club.—It certainly was appreciated.

To the Secretary-Treasurer Frank Kellam, and the Club representatives who spent quite a bit of time and work on behalf of the Club and the Engineering Society, we extend our grateful thanks.

Best of luck in your exams, fellows, and to the graduating class, "Remember Pearl Harbour, Hong Kong and Singapore, and do your utmost for the man behind the gun".

V. H. Smith,
Chairman.

PROF. R. W. ANGUS
HON. VICE-CHAIRMAN
D. J. PARRISH
CHAIRMAN
MR. D. C. CARLISLE
HON. CHAIRMAN
PROF. W. G. MCINTOSH
HON. VICE-CHAIRMAN
G. L. S. BIGGS
VICE-CHAIRMAN
J. P. MEHRTENS
SECRETARY-TREASURER
MECHANICAL CLUB
EXECUTIVE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1941-1942
L. G. RUPERT
4TH YEAR REP.
E. R. DIXON
3RD YEAR REP.
N. A. BALES
2ND YEAR REP.
D. D. CURRIE
1ST YEAR REP.
D. E. BECKS
1ST YEAR REP.

MECHANICAL CLUB

Well, fellows, here we are, nearing the end of another School year and the time is at hand to review briefly the activities of the past year.

We have been very fortunate this year in the matter of field trips. Fourth year made one trip to Bala last September and inspected a couple of power plants near there—some fun. Then, in November, we visited the John Bertram plant in Dundas. Third year, also, did very well in this respect, visiting the Steel Company of Canada and the Otis Fensom plant, both in Hamilton —and from all accounts everyone was happy about the whole thing! Arrangements have been made for the second year to visit the John Inglis plant in the near future.

All the meetings this year have been well attended and I hope interesting. At our first meeting in October, Professor R. W. Angus was the guest speaker and the meeting ended with a little fun and nonsense, topped off with refreshments! Mr. E. T. M. Bailey, Combustion Engineer of the Steel Company, gave an interesting talk at our November meeting.

In January, we held a joint supper meeting with the A.S.M.E. student branch. Professor Angus gave a report on his trip to the New York meeting in December, and we then joined the Junior A.S.M.E. to hear Dr. Horne of the Port Hope Radium Refinery discuss radium and uranium. Plans are now under way for our February meeting at which Mr. K. L. Morris of the Acme Screw and Gear Limited, will address the club.

Plans are also under way for the annual dinner early in March, and the guest speaker on that occasion will be our Honorary Chairman, Mr. D. C. Carlisle.

I would like to take this opportunity of thanking the Executive for their excellent support, and Honorary Vice-Chairmen, Professor Angus and Professor McIntosh, for their assistance and advice, and to wish next year's Executive the very best success.

Don Parrish,
Chairman.

W. SHULMAN
5TH YEAR REP.

C. F. T. ROUNTHWAITE
CHAIRMAN

J. A. MURRAY
VICE-CHAIRMAN

F. MACKENZIE
SECRETARY-TREASURER

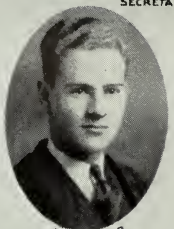
G. E. MORLEY
4TH YEAR REP.

ARCHITECTURAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1941-1942



L. G. BAKER
3RD YEAR REP.

H. R. AGNEW
2ND YEAR REP.

P. F. TILLMAN
1ST YEAR REP.

Freeland Toronto

ARCHITECTURAL CLUB

The Architectural Club had one of its busiest years in the last two terms. Aside from Club activties, the architects busied themselves with every dance and entertainment that the school held. It would be small praise to say the School Dinner decorations and menus were good simply in view of the fact that they were designed entirely by Schoolmen, who spared neither their time nor imagination to achieve these results. The department also undertook the responsibility to provide the At-Home decorations and War Corsages; a noble effort that required many weeks' work. To single out individuals for commendation for their co-operation would mean listing the entire Club. It is with pride we can say that we are certain no other group ever worked in closer harmony when there was a job to be finished.

Besides helping School, there were the usual outside affairs —such as the C.O.T.C. Ball. When people ask us how we do it, we still wonder ourselves. If anyone wondered about the origin of the signpost that appeared on the campus in February—we didn't.

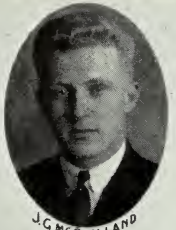
.. Again, on the serious side, the Club was addressed by Mr. Van Norman on prefabricated houses, and by Mr. Steele on Apartment buildings. In February we sent a show to Montreal to let McGill know how we were functioning. It included everything from sketches made of Gull Lake to working drawings and structural briefs for the steel framing and concrete design.

This year has convinced the Club that Engineers and Architects can co-operate and achieve astounding results. Let us hope this valuable lesson will not be forgotten in after life. Certainly, good design united with good engineering is a remarkable thing. Specialists working in their own fields are a blessing—but the same experts attempting to outdo trained men in other lines are sometimes amusing.

This year we are not able to report any serious accident to any member of the Faculty. Last year's unfortunate incident, where a professor was injured at a club skiing meet has not been repeated. There may be more snow next year.

The two members of Fifth Year who hope to be graduated soon are sure they are leaving everything in capable hands. Should, at any time, any of you want to know how to give a party, decorate a ballroom, erect a sign post, rig an osculometer, win an election, build a bank, or a factory, or a power house, just drop in on any of the Club of Department Four, past, present, or future.

C. F. T. Rounthwaite, *Chairman.*



J.G. McCLELLAND
SECRETARY-TREASURER

C.B. LIVINGSTON
CHAIRMAN

R.A. MULLER
VICE-CHAIRMAN

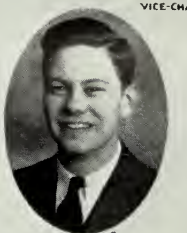
R. KLEIN
4TH YEAR REP.

ENGINEERING PHYSICS CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1941-1942



J. SHALES
3RD YEAR REP.

V. STOCK
1ST YEAR REP.

D. JOHNSTON
2ND YEAR REP.

ENGINEERING PHYSICS CLUB

This season a new policy regarding the frequency of meetings was instituted, and, if the number of members attending them may be regarded as a criterion, it is deemed a success. Smokers were held monthly, rather than more often as in previous years, with the hope that attendance might be increased. Even with the stern competition offered by military drill, sports activities, and Dr. Satterly's problems, some forty to fifty members managed to find time to meet in the East Common Room. It is suggested that this policy be continued during the coming season, and until such time (let us hope it will be soon) that military drill ceases to place its urgent and necessary demand on us.

Following the successful experience of previous years, the Engineering Physics Club opened its season with a dinner meeting at Hart House early in October. Our Honorary Chairman, Professor R. F. Legget, was the after-dinner speaker, his topic being "The University and You". Afterwards, the freshmen obliged with "special entertainment".

During the second week of November, Mr. Czerwinski, who had left Poland one step ahead of the invading Germans, presented a paper on "Wood in the Aircraft Industry". Refreshments were served at the close of a well-attended smoker.

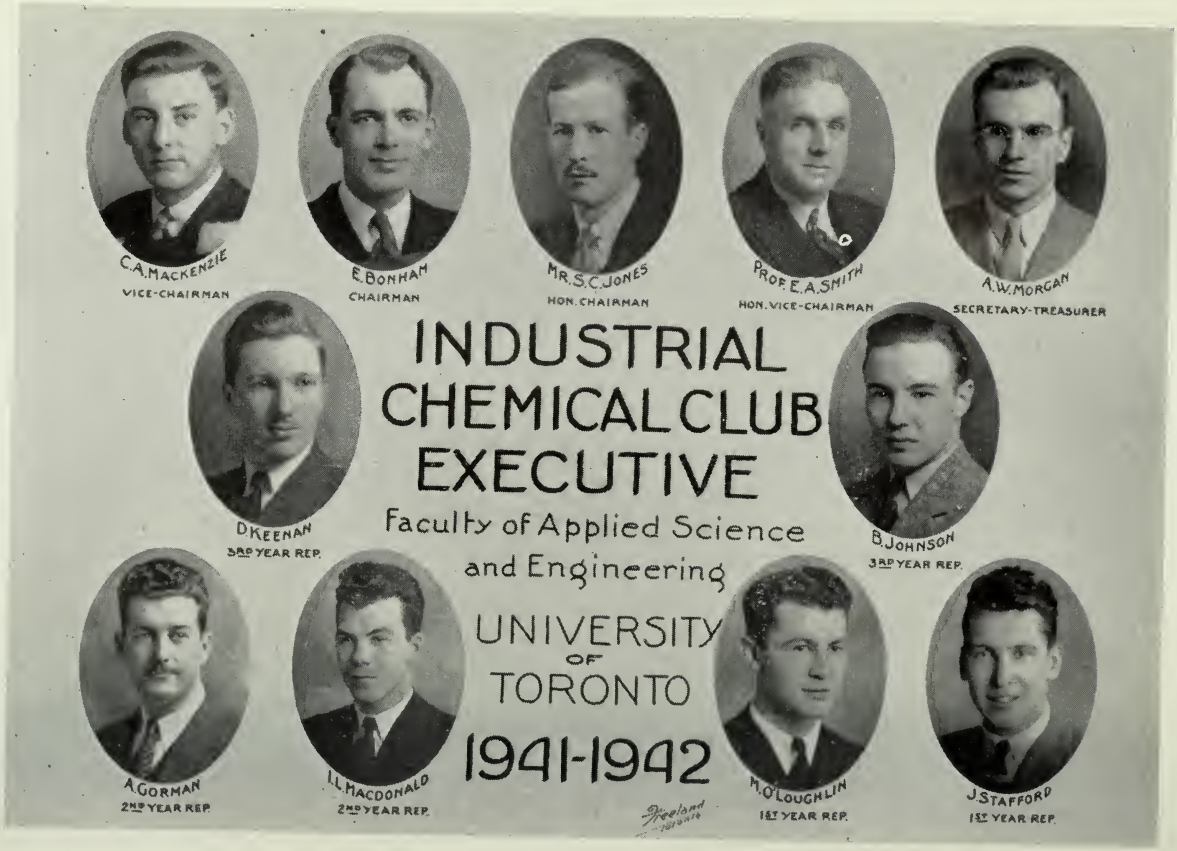
Bowling at the (censored) Alley established a precedent as far as types of meetings are concerned. There is many a wicked wielder of the wooden spherule amongst us (your Chairman excepted).

Adjournment for a much-needed rest during the Christmas holidays was then necessarily in order. At this point it might be added that word from Bill Heaslip, one of last year's third year, has been received to the effect that he is in the Near East.

Dr. Gilchrist set us on the right path for the new year with a discussion of the subject of Geophysics. A summary of his thesis was given by each of the fourth men at the following meetings. To close the season, a second dinner was thought fitting, the scene again being Hart House.

In closing, your Chairman would like to thank his executive for their unqualified support, and Professor Legget for his timely suggestions. In addition, the co-operation of the members, without which no club can properly function, was very encouraging. It is the sincere hope of your Chairman that this will continue during the coming year.

C. B. Livingston,
Chairman.


C.A. MACKENZIE
VICE-CHAIRMAN
E. BONHAM
CHAIRMAN
MR. S.C. JONES
HON. CHAIRMAN
PROF. E.A. SMITH
HON. VICE-CHAIRMAN
A.W. MORGAN
SECRETARY-TREASURER
D. KEENAN
3RD YEAR REP.
B. JOHNSON
3RD YEAR REP.
INDUSTRIAL
CHEMICAL CLUB
EXECUTIVE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1941-1942
A. GORMAN
2ND YEAR REP.
I.L. MACDONALD
2ND YEAR REP.
M. O'LOUGHLIN
1ST YEAR REP.
J. STAFFORD
1ST YEAR REP.

INDUSTRIAL CHEMICAL CLUB

Fresh scars on the rugged School walls tell tales of another year passed. They indicate as well that once again the "Chem. Clubbers" have been doing great things.

The opening meeting of the year was held at Hart House on October 23rd, and featured Mr. John Buchan as guest speaker. His subject, "Plastics", was illustrated by sound films and claimed the undivided attenton and interest of all present.

Early in November the Initiation Stag took place at a down-town hotel. The proceedings of the evening met with such warm approval that a few members went to unlimited bounds to express their enjoyment. Doubtless, the fellows favour bigger and better stags.

Research Enterprises Co. Ltd. provided the club with a most successful and enjoyable second meeting. Dinner in the plant cafeteria followed by an interesting tour gave an evening filled with rare entertainment. Thanks are due to Colonel W. E. Phillips and Professor L. J. Rogers, who made this trip possible for us.

A much anticipated field trip to Hamilton finally saw reality. Third and Fourth years shut down shop to spend the day visiting the Steel Company of Canada and the Dominion Glass Company. A most profitable day was spent by all—long to be remembered for many good reasons.

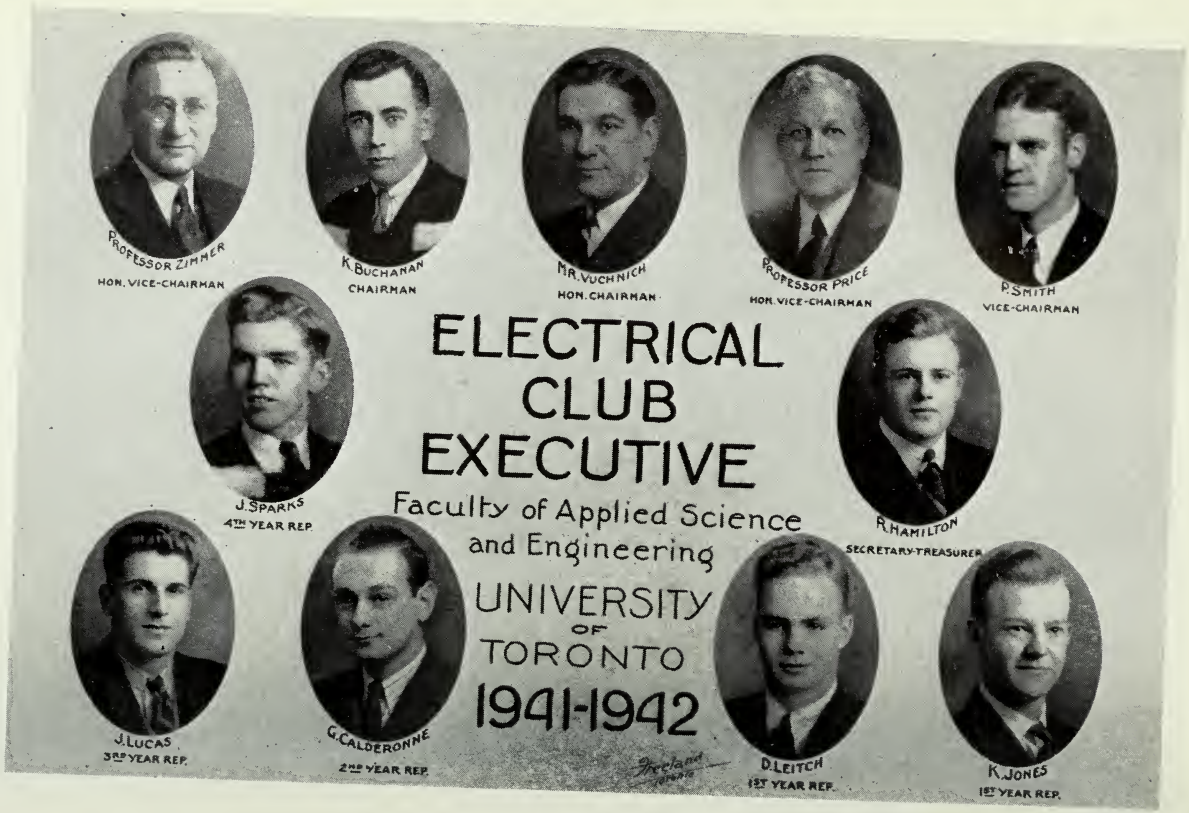
The third dinner meeting of the year welcomed Dr. H. Lawford of Standard Brands Company, who spoke to the club on the "Commercial Production of Yeasts". A film on that subject presented quite vividly a magnified picture of the life process, growth, and budding of an individual yeast cell.

Unfortunately, at the time of writing this report, the Club activities are not yet complete, and, therefore, final details cannot be recorded here. The Chem Club Dance and the final meeting are still events of the future. However, I feel we are safe in predicting that they will meet with the same happy response as those preceding activities.

In closing, I wish to express my thanks to the executive members of the club for their kind support and co-operation throughout the year. In particular, I am indebted to Al Morgan and Charlie Mackenzie for invaluable assistance in carrying out the executive duties.

For the Class of 4T2 and myself, I wish all you "Chem. Clubbers" good luck and smooth sailing.

ERIC E. BONHAM, *Chairman.*


PROFESSOR ZIMMER
HON. VICE-CHAIRMAN
K. BUCHANAN
CHAIRMAN
MR. VUCHNICH
HON. CHAIRMAN
PROFESSOR PRICE
HON. VICE-CHAIRMAN
P. SMITH
VICE-CHAIRMAN
ELECTRICAL
CLUB
EXECUTIVE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1941-1942
J. SPARKS
4TH YEAR REP.
R. HAMILTON
SECRETARY-TREASURER
J. LUCAS
3RD YEAR REP.
G. CALDERONNE
2ND YEAR REP.
D. LEITCH
1ST YEAR REP.
K. JONES
1ST YEAR REP.

ELECTRICAL CLUB

With the final examinations now drawing near, we realize that it is again necessary to bring the Electrical Club's activities to a close. Despite the fact that time has been at a premium for all of us and every night of the week taken up by military work of some form or another, the Club's activities have been exceptionally well attended.

The primary function of the Electrical Club this year has been to promote acquaintanceship among the members of all years in Electrical Engineering, and to get the department pulling together as a whole instead of drifting along as if we were not interested in life at "School".

The Club's programme for the year included various activities as follows:

Four smokers were held in Hart House; the first was addressed by Professor A. R. Zimmer on "Electrical Engineering"; the second one by Mr. M. N. Vuchnich, our Honorary Chairman, on "Electric Arc Welding"; the third one, held in conjunction with the Civil Club, was addressed by Mr. M. J. Aykroyd on "Ploughing the Overhead"; and the fourth one by Professor E. A. Allcut on "Investigations and Litigations".

A joint meeting was held with the A.R.E.E., Toronto Section, at which four of the graduating students addressed us on the subjects of their theses.

The Club promoted a field trip for all years to the Lincoln Electric Co. at Leaside.

Another highlight in the year's programme was the stag evening which was held near the end of January at one of Toronto's now famous hotels.

Plans are now under way for the Annual Dinner which will be held about the middle of March.

The Club has been run on a very democratic principle this year, and a personal word of thanks from the Chairman to all members of the Executive is necessary as a successful year would not have been possible without their fine work.

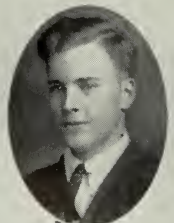
As this brings us to the end of the Club's present activities, there is little left but to express appreciation for all those who contributed to a successful 1941-42, and to wish those who follow, the best of luck.

K. A. Buchanan,
Chairman.

G. C. GILCHRIST
VICE-CHAIRMAN

A. B. EXTENCE
CHAIRMAN

PROF. G. R. LORD
HON. CHAIRMAN



R. E. SCOTT
SEC'Y-TREAS.

G. E. REEVES
4TH YEAR REP.

DEBATES CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1941-1942

G. M. NIXON
3RD YEAR REP.

D. V. SCHMIDT
2ND YEAR REP.

W. J. R. JOHNSON
1ST YEAR REP.

Freeman Toronto

DEBATES CLUB

With final examinations now very near it is time to bring to a close the activities of the Debates Club. During the past year the Club has flourished in spite of present conditions.

The first meeting was very successful and was held as a luncheon meeting in Hart House. The speaker on this occasion was Mr. G. A. McMullen, lecturer in public speaking at McMaster and Emmanuel College, who gave a very interesting and humorous talk on "The Importance of Public Speaking to the Engineer".

The second meeting took the form of a debate on the subject, "Resolved That It Is a Good Thing for the Engineer to Be Married While at College", the affirmative being upheld by Ron Scott and Gord Gilchrist, and George Nixon and Lyman Orr taking the negative. Many interesting views were voiced at this meeting, both in the debate and in the subsequent discussion.

In the next debate, Don Schmidt took the affirmative of the old question, "The Non-College Girl Makes a Better Wife for the Engineer Than the College Girl", while George Lee upheld the college girls and illustrated his arguments with quotations from Whitney Hall.

In January the Club arranged the preliminary competition to determine the six men who were to present papers at the annual Engineering Institute of Canada Students' Night. The winner in Senior School was Walter Glynn, Civil Club Chairman, who spoke on "Pre-Stressed Reinforced Concrete", and in Junior School Bill Cartier was successful, speaking on "Frequency Modulation".

The annual Impromptu Speaking Contest proved to be a very popular feature, fifteen men from all years taking part. The contestants spoke on a great variety of subjects, the judges—Professor Legget and Professor Lord—awarding the Engineering Society Public Speaking Cup to Keith Kidd, who spoke on "More Cultural Subjects in the S.P.S. Curriculum".

Plans are now under way for the Segsworth Trophy debates, and keen inter-year competition is expected to determine who will be the winers of the pewter beer mugs.

In winding up the year, the Executive wish to thank Professor Lord for acting as Honorary Chairman, and for his assistance in all matters that were referred to him.

Best luck to next year's executive, and under it may the Club go forward, if some of the conditions caused by the war do not interfere.

ALAN B. EXTENCE, *Chairman.*

J.M. LEITCH
PUBLICITY
W.E. BRUNDRIT
PRESIDENT ENG. SOC.
O.K. SMITH
VICE-CHAIRMAN
J.R. GUNDY
CHAIRMAN
J.N. DICKIE
FINANCE
F.E. MILLER
ENTERTAINMENT
D.G. FINLAYSON
MARSHALLING
SCHOOL DINNER COMMITTEE
Faculty of Applied Science and Engineering
UNIVERSITY OF TORONTO
1941-1942
J.T. CAWLEY
RECEPTION
R.C. FAIRFIELD
DECORATIONS
H.L. MACKLIN
TICKET SALES
H.J. AYKROYD
ACCOMMODATION
L.G. BAKER
PROGRAMMES
Freeland Toronto

52nd ANNUAL SCHOOL DINNER

Heralded by a traditional Auction Sale, the 52nd Annual School Dinner, held in the Great Hall at Hart House on November 20th, will long be remembered by Schoolmen.

Engineers began gathering early and by 7.15 the Great Hall and Faculty Dining Room were crowded with undergrads, grads, and members of the staff, who gazed with awe at the regal dinner that the kitchen staff had prepared and served in the well-known Hart House manner.

Schoolmen made the most of the sumptuous feast, then relaxed for the evening's enjoyments. First came the customary sing-song in which Mr. R. Workman, assisted by Mr. Kerrigan, led us through all the good old School songs. Among the guests were Dean Young of S.P.S., Wing Commander T. R. Loudon, R.C.A.F., Dr. Cody, Mr. Bryce, Mr. Frost and Dean Beatty.

Mr. Bryce, a past president of the Engineering Society, was then called on to present the Gold Keys to the graduating members of the Engineering Society Executive. Next, Dean Beatty presented the certificates to last year's Scholarship winners. Then Mr. Frost, President of the Association of Professional Engineers, presented their diploma to Mr. Ham.

The School Band entertained next, followed by a toast to the University. Dr. Cody, in answering the toast, said that "We want this University to be foremost in this great cause. Let us be those who do, and do not boast."

Mr. Brundrit then introduced Dean Young, to whom the dinner was dedicated. Although this was the 40th Annual School Dinner which Dean Young had attended, it was his freshman appearance as Dean. In his tribute to engineering he stated that "After the war, engineeers must undertake a vast amount of reconstruction and rehabilitation."

Following Dean Young's speech, Mr. Giordmayne entertained by showing a few magical tricks that can't be done by "logs".

Mr. V. Smith then introduced the guest speaker, Wing Commander T. R. Loudon, better known to some students as "Tommy" Loudon, who used to lecture on Statics here until the war broke out. Wing Commander Loudon, in speaking, stressed the share of responsibility of war duties every student must assume, whether in the lab, the armed services, or industry, and he stated "A new doctrine is developing among the people of England under stress of the war; 'how much can I put into life' not 'how much can I get out of life'."

The President of the Engineering Society then thanked the speaker and the dinner was brought to a close in the traditional manner by everyone giving a lusty TOIKE OIKE.

J.M.LEITCH
PUBLICITY
M.J.AYKROYD
VICE-CHAIRMAN
J.R.GUNDY
CHAIRMAN
W.F.BRUNDRIT
PRESIDENT ENG. SOC.
J.N.DICKIE
FINANCE
J.HAWKEN
TICKET SALES
SCHOOL AT-HOME
COMMITTEE
Faculty of Applied Science
and Engineering
O.K.SMITH
RECEPTION
UNIVERSITY
OF
TORONTO
1941-1942
C.F.T.ROUNTHWAITE
PROGRAMMES
F.L.DOTY
ACCOMMODATION
Skeeland
Toronto
J.A.MURRAY
DECORATIONS
D.G.FINLAYSON
DELEGATES

SCHOOL AT-HOME

The highlight of School's social life, the School At-Home, took place on the Convention Floor at the Royal York Hotel on January 16th. The affair more than maintained the prestige of School At-Home as the foremost social function of the University.

Over 1000 engineers and their ladies danced between mural covered walls of the ballroom, The murals, designed and executed by the Architects, were quite a revelation to the ladies. Illustrated with appropriate verse "Why Not to Marry an Engineer", the murals gave at least a dozen reasons, any one of which was sufficient.

Since supper was not served, the orchestra, Bob Shuttleworth and Co., played almost continuously, so that everyone had ample opportunity to "swing it". And everyone did just that, gleefully.

Time out from dancing was taken at 11 o'clock for the Floor Show. The show consisted of dancers who showed how it could be done in best Arthur Murray style; tumblers who drew gasps of admiration from the audience; a magician who subdued everyone with his bag of tricks, and a master of ceremonies who was a surprise to all, including the committee.

All good things come to an end, however, and at 3 o'clock in the morning, the very weary but still joyful crowd donned hats and cloaks and headed for home, voting it the best At-Home yet.

The distinguished patrons and patronesses were: President and Mrs. H. J. Cody, Dean and Mrs. C. R. Young, Professor and Mrs. R. W. Angus, Professor and Mrs. J. W. Bain, Professor and Mrs. R. R. McLaughlin, Professor and Mrs. W. J. T. Wright, Professor and Mrs. C. G. Williams, Lieut-Col. and Mrs. W. S. Wilson.

W. SHULMAN
PUBLICITY
J. R. GUNDY
VICE-CHAIRMAN
J. M. LEITCH
CHAIRMAN
W. F. BRUNDRIT
PRESIDENT ENG. SOC.
J. N. DICKIE
FINANCE
K. KIDD
STAGE MANAGER
SCHOOL NITE
COMMITTEE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1941-1942
E. BOWHAM
RECEPTION
O. K. SMITH
REVUE DIRECTOR
J. P. D. ROGERS
DELEGATES
M. J. AYKROYD
TICKET SALES
A. G. ELLIOTT
ACCOMMODATION

SCHOOL NITE

Friday, February 6th, Schoolmen again demonstrated their superiority over the rest of the campus in yet another line of endeavour. Hart House was strained to capacity as over 1,600 Engineers and their choice of the fairest, gathered to witness the mighty School Nite Revue, and to partake of the multitude of other entertainments offered. The Revue, produced by the Engineers, of the Engineers, for the Engineers, certainly ranked among the finest of all school revues. The success of the venture was early evinced by the fact that the S.R.O. sign was hung out a week before the curtain went up on the 1942 edition of School Nite.

Variety was the keynote of the night's entertainment. The gaily decorated halls resounded again and again to the hunting cry of the forty beersmen, as they sought out new attractions. An amazing novel tank display by the Mermaids, a spectacular gym show by the Varsity Gym Team, and a ventriloquist's act were some of the entertainments there for the taking.

The "steal" of the evening was the osculometer. Amply described in *Toike Oike*, this innovation to School Nite was an engineering triumph and an immediate success. Although no one succeeded in blowing its fuse, unofficial reports from the Hydro testify that power accumulated in the "osc" greatly exceeded power supplied.

No less than four orchestras were necessary to cater to the dancing demands of the Schoolmen. Featuring the "Modernaires" in the Big Gym and Charlie Hannigan in the Music Room, dancing ranged all the way down the line from sweet and soft to sweat and hot.

About 11.30, time out was called to look after the inner man. Cake and coffee in the Great Hall did the trick—then back to soft lights, sweet music, and lilting laughter until two o'clock. Too soon doors were locked and we found ourselves on the outside, with the memory fresh in our minds of School Nite, 1942.

And so, hats off in appreciation to the Committee and to O.K. Smith, and the cast who were responsible for the mighty fine entertainment supplied.

Gracing this festive occasion by their patronage were: President and Mrs. H. J. Cody, Dean and Mrs. C. R. Young, Professor and Mrs. R. W. Angus, Professor and Mrs. J. W. Bain, Professor and Mrs. K. B. Jackson, Professor and Mrs. G. B. Langford, Professor and Mrs. W. M. Treadgold, Lieut.-Col and Mrs. H. H. Madill, Lieut.-Col. and Mrs. W. S. Wilson, Professor and Mrs. W. J. T. Wright.

C.F.T. ROUNTHWAITE
ASST. EDITOR

W. SHULMAN
EDITOR

F. MACKENZIE
ASST. EDITOR

R. E. SCOTT
CLUBS EDITOR

TOIKE OIKE STAFF

Faculty of Applied Science
and Engineering

UNIVERSITY OF TORONTO

1941-1942

D. GROSSKURTH
SPORTS EDITOR

Freeland
Toronto

H. H. SINGER
FEATURE EDITOR

TOIKE OIKE

The *Toike Oike,* or the School Scandal Script, is School's chief non-technical literary contribution to the world. This year the little punch-packed paper ran in its thirty-third volume in eight editions, which were distributed free to eagerly waiting Schoolmen. Each edition came out in time for or shortly after some important School event.

For instance, the poor innocent species of humanity who are borne into the Little Red Schoolhouse for the first time each September, must be made aware of their extreme humbleness and insignificance. This is done by the Sophs. The *Toike Oike* then impresses these facts upon their minds in the Freshman Edition, and also makes them aware of certain small rights. In this edition also, the Dean and the President of the Engineering Society are introduced to the freshmen, in writing.

At the Frosh Initiation these same Frosh are promoted to the status of human beings and this is verified in the Reception Edition, which may be kept as proof, along with the green pin, as a symbol of freedom. Each edition henceforth features as a guest writer, some member of the staff.

The School Dinner Edition hits a high-water mark. Six pages full of the most remarkable assortment of fun and features ever assembled outside of a museum. The Christmas issue follows shortly after, and the holiday acknowledged by *Toike Oike* as a fine thing turns out to be a great success.

The School At-Home and School Nite Editions came out in the form of programs, easily folded into a pocket-size affair, and overflowing with literary masterpieces that the New Yorker turned down, and the latest collections of Korn available.

Then comes a great financial deluge for the *Toike Oike.* For now the editor himself, after a brief six weeks' course in the art, sets about to remove from highly susceptible election candidates any and all spare funds they may have on their person in return for spreading their name to the far corners of the Campus. Candidates have been known to hand over the entire contents of their wallets when they saw the editor approaching.

The Graduation Edition is the final issue of the year and the one at which copious quantities of tears are shed, hearts broken, and best wishes circulated—and all publicly in the *Toike Oike.* At this time, also, the Editor searches around for some brain who may perpetuate this sheet in its proper fashion, while with all due humility he withdraws from the responsibility it set on his poor shaking shoulders.

W. Shulman.

GULL LAKE, 1941

SURVEY CAMP

Well, this year it was 4T3's turn, and how we made things turn!

About the middle of August, sleepy old Minden awakened with a crash, with groans of "Oh, my gosh, they're here again." Men of 4T3, Miners and Civils, streamed into camp from the mines and mills, the bush and the construction jobs, ready for surveying and anything that came along.

After a fight for the bunks closest the fireplace, murmurs were heard, "Deer Lodge", "Wig-a-mog", "The Brass Boot". . . . Featherstone and Co. were the expeditionary force, and the tidings they brought back caused a mass desertion of the camp for many a night. For six weeks, the country-side echoed with Smith's famous war cry "B-e-a-v-e-r". . . .

At the bunk-house, Cawley spent his evenings teaching the boys the finer points of an ancient game of cards, with Metcalfe keeping an eye on him.

Over Deer Lodge way, Casanova McCrodan led the parade as the weekly new crop rolled in. How about the night you sang "Ann Boleyn" at the weiner roast, Pete? Macklin, LeSueur and Douglas looked after things around the lake. Famous words were Macklin's "She's nice", while Maynard packed a lunch for his nightly five-mile paddle to Miners' Bay.

Five men in a canoe on a warm Sunday afternoon at Rackety, and Giovanetti trying to push his canoe to shore from the middle of Gull Lake. . . . Great days!

Even with all the sports equipment so kindly provided to use up energy, the bunkhouse saw quite a few rough evenings. The night the Civils made a stand at the end of the dock is one to be remembered. If there was anyone in camp that night who didn't go in the lake, it was because we couldn't find him. The boys are still looking for the men with the perverted sense of humour who got loose with the white paint one dark night and then broke the lights. The Mintos would like to know who painted the sign on the cookhouse wall, and also how that little building got rolled down the hill.

What a night that was when we launched the submarine tank, and fired a salute in honour of it.

Another thing we would like to know is why Aykroyd's "car" stood on the side of the road all night, and just what Aykroyd,

Dobson and Curzon were doing upstairs that night—the night they found the third hotel in Minden?

Then came the bunk-house brawl. Archibald did pretty well with his decorating crew, and by car, canoe and motor-boat, the fair sex arrived to swing to the Brandon Boys. With Huckle reading, and Prentice supplying sound effects from outside, the boys put on a take-off on Dangerous Dan McGrew that put the audience into hysterics. Funny how Holmes disappeared right after that, and also, what became of O'Donnell and Ferguson that night?

Canoe trips? — Sure! Three week-ends. And three week-ends it rained. That crew of eight that bucked Gull Lake one windy afternoon were sure glad to get their feet on solid ground again, and dump the water out of the canoes.

We did some surveying, too, and also put that dike on the map again—and just ask any of the Civils what "right ascension" is now.

The 4T3 sign went up even though we had to add a section to the bunkhouse to do it. With Curzon and Telford on the draughting boards, Maynard with his big paint brush, and Cawley's artistic touch, we made a job second to none.

Yeah,—it was a good time, but it didn't last long enough, and we were sorry to drive through that poor old crippled gate for the last time.

Years from now, when men of 4T3 get together, with their bald heads and their paunches, they'll lift a few and say — "Remember that time at Survey Camp?"

AL. MCLACHLIN.

Graduate's Album

4T2

Engineering Society

THE UNIVERSITY OF TORONTO

FOURTH YEAR CIVILS

Third Row: N. Prideaux, P. Harakas, J. Solomon, O. Smith, J. Chantler, G. Taylor, V. Polley.
Second Row: R. Tamblyn, G. Crase, J. Leitch, R. Gundy, R. Timms, B. Newman, J. MacArthur, C. Reuben.
First Row: E. Percival, R. Wardell, Dean Young, W. Glynn, Prof. Treadold, Prof. Smither, J. Coughlin.

FOURTH YEAR MINERS AND GEOLOGISTS

Fourth Row: G. Ambrose, Mr. Pancer, G. Warner, J. Grant, B. Forestell, Prof. Okulitch, B. Bolton.
Third Row: W. Woods, J. Hurst, J. Fox, K. Gilbert, A. McLachlin, B. Wallace, Prof. Moore, Prof. MacLean.
Second Row: I. Sloane, E. Berridge, T. Morton, C. Palmer, Prof. Wolfe, Prof. King.
First Row: B. Fairlie, V. Smith, W. Brundrit, D. Finlayson, H. Barrett, Prof. Langford, Prof. Williams, Mr. Hewer.

FOURTH YEAR MECHANICALS

Fourth Row: K. H. Y. Mark, J. V. McKenna, T. B. Peart, I. A. McCallum, W. B. Moore, C. E. Simmons, W. D. Drummond, E. E. Walden, E. F. Hendricks, W. J. Scarlett, W. J. Staples, R. B. Paul, J. R. Kirkwood, H. Etlin.

Third Row: G. H. Morris, D. G. Cramb, P. C. Schell, M. A. Phipps, A. C. MacNaughton, C. C. J. Theuerle, J. H. Blair, T. C. Hastings, D. C. Smith.

Second Row: J. D. Morse, A. B. Extence, D. W. Knowles, J. B. Vallario, L. G. Rupert, W. T. E. Duncan, I. W. Shepherd, A. C. Ingram, H. H. Madgett, J. R. Williamson, W. L. Bland, W. M. Ruddock.

First Row: D. J. Parrish, Prof. R. C. Wiren, Prof. W. G. McIntosh, Prof. E. A. Allcut, Prof. R. W. Angus, Prof. R. Taylor, Prof. G. R. Lord, D. G. Huber, J. P. D. Rogers.

Inset: F. J. Connor.

FOURTH AND FIFTH YEAR ARCHITECTS

Third Row: A. S. Mathers, Lt.-Col. H. H. Madill, Prof. E. R. Arthur, H. M. S. Carver, Major W. E. Carswell.
Second Row: K. A. Cameron, C. F. T. Rounthwaite, J. A. Murray, Miss J. D. Taylor, Miss M. J. Stewart, G. E. Morley, W. Shulman.
First Row: R. C. Fairfield, W. T. Pentland, J. M. Charles.

FOURTH YEAR ENGINEERING PHYSICS

Second Row: T. Stephenson, H. Lucas, F. Hanna, M. Pesando, H. J. Greeniaus, C. Muirhead.
First Row: R. Klein, Prof. Jackson, C. Livingston, Prof. Satterly, K. Kidd.

FOURTH YEAR CHEMICALS

Fifth Row: A. Farquhar, W. B. Crawford, J. E. Margison, D. Dworkin, W. P. Woods, T. B. Walker, D. T. Lapp, J. H. Bowman, H. Wong, R. M. Gale.

Fourth Row: E. E. Bonham, C. P. Stobie, C. A. McKenzie, J. S. Lilburn, L. D. Holt, J. H. Alexander, R. G. Code, J. F. Flett, L. N. Stanners.

Third Row: L. J. Reubens, E. B. Trickey, J. H. Gulliford, D. K. Jackson, J. G. Livingstone, W. F. Graydon, H. I. Hadler, R. L. Greenhow, P. Leprak, D. Anderson.

Second Row: M. Adelman, W. S. Cotton, R. M. Brown, F. A. DeMarco, D. H. Barnes, A. G. Elliott, W. T. Sargent, T. L. Gerhart, R. W. Glenfield, C. E. Sloan, R. J. Adams.

First Row: W. G. MacElhinney, B. Marks, A. Hunt, J. B. Breckenridge, Professor Smith, Professor Ardagh, Professor Bain, Professor MacLaughlin, H. E. Staples.

Absent: Professor Boswell, F. E. Miller.

FOURTH YEAR ELECTRICALS

Fourth Row: K. Buchanan, F. Doty, E. Doeringer, J. Asselstine, J. Quist.
Third Row: G. McLaughlin, W. Ward, M. Kilpatrick, J. Morice, R. Horning, D. Bamford, A. Rosenthal, G. Reeves.
Second Row: D. Johnson, G. Cox, A. MacPherson, J. Sparks, W. Robinson, W. Shearer.
First Row: Prof. Brown, Prof. Smith, Prof. Price, Prof. Zimmer, Prof. Cass-Beggs, Mr. Noakes, Mr. Anthes.
Absent: F. Newman.

IV YEAR METALLURGISTS

Fifth Row: D. Allan, W. Johnson, J. Fowlie, D. Olsen.
Fourth Row: W. Hodgson, J. Collinson, A. Hudon, G. Lee, P. Turner.
Third Row: J. Mees, D. Marshall, T. Gillies, R. Chambers, G. Montgomery, W. Bryce.
Second Row: Mr. Ross, A. Halford, W. Montgomery, F. Radmore, J. Hawken, H. Moorehead.
First Row: A. Frumkin, Prof. Newcombe. Prof. Toomer, Prof. Guess.

GRAD BALL 1942

Time: The evening of March 4th (and morning of March 5th) in the Year of Our Lord, nineteen hundred and forty-two.

Scene: A large ballroom. At the end opposite the entrance is a raised platform, on which sit a group of musicians calling themselves "The Modernaires". Conspicuous is one drummer, who accompanies his rhythm, (which is very, very good), with undulations of a seemingly rubber neck. Also present is a little girl who periodically adds vocal sounds to the music—the effect is quite pleasing.

Down the left side of the room are many tables, at which are seated handsome young men clad in white ties and tails, and beautiful damsels made more so by means of diverse costly vestments. Much laughter and other sounds of merriment is heard—especially from the extreme end, where sit a group of "Mining Geologists".

A survey of the right side of the ballroom discloses a very long table at which sits a mixed group, some of whom are called "Patrons" and other "Committee".

Theme: "Good ol' 4T2, how we love her", or "Well, boys, this is the last time".

Entre-acte: Refreshments (very appetizing) followed by numerous and varied presentations; these ranged from well-earned trophies for athletic prowess, to equally well-earned trophies for other achievements.

There you have a brief glimpse of 4T2's Graduation Ball.

Many, many thanks are due to the Committee for giving us an evening to be long remembered—definitely "one for the book".

CLASS OF 4T5

In retrospect, it seems like only yesterday, that we purchased our year cards from our impressive, imperious seniors, procured our symbolic green ties, and then proceeded to Room 38 to hear "Freshman" Dean Young's and Professor Wright's welcome addresses of wise counsel and advice.

On reviewing the past year which has been a most successful and unprecedented one from a standpoint of enthusiasm and effervescence, several highlighted events come into mind.

The Sophs did themselves proud with their welcome initiation party for us at Hart House. In reciprocation, we extended ourselves with a scintillating Soph-Frosh Dance, complete with a Sadie Hawkin's skit.

One incident which established us as genuine "Schoolmen" was the decisive victory over Meds in the freshmen fight, and once again proved that forty beers have a decided edge over spinach and vitamins.

The School At-Home was a definite success. This extravaganza, coupled with School Dinner and hilarious School Nite, gives ample criterion on just how efficient and qualified are senior Schoolmen. These "Acmes of perfection" introduce to us the heights we have to attain in our next years to equal their splendid efforts.

In athletics, 4T5 held the prominence of having the most conspicuous celebrities. Vern Booth won the University Novice Track Meet. Frank Williams played first string ball for Argonauts. Gord Ball won the University Golf Championship. Art Ridler and Don Simpson, star hockey players, were acquisitions from U.C.C.'s powerful champion Junior team. Last of all, there is "Big Pete" Aykroyd, demon athlete of versatility—swimming, rugby, etc., etc. Space is limited or we could mention a score of other "big names".

All in all, it has been a most enjoyable year and the executive wishes to thank the members of 4T5 for their complete cooperation in every respect. Due to the gravity of world conditions, at this time, we would like to institute the 4T5 Creed:

"Our aim is to assume responsibility by enlarging our knowledge of obligations and increasing our capacities to perform them."

JACK STAFFORD,
President.

P.S.—"Preciseness is the hallmark of a successful engineer."
—Quote: Professor Legget.

CLASS OF 4T4

By the time you read this, the school year will be over—and doubts will now assail us as to the outcome of our exams. But whatever the future holds for us, we, the Class of 4T4, have spent a highly entertaining and informative year. Though rather out-numbered by the Frosh, we feel that our quality more than compensated for the Frosh quantity, and that we have made them men to be proud of in the future.

Once again, the Soph-Frosh reception was held at Hart House, where the largest crowd of frosh ever to attend this function was addressed by our new Dean, C. R. Young, and ably entertained by Claire Rouse. In return, the frosh burlesqued the Engineering Society Storeroom. Then came a real jam session by both Sophs and Frosh. It was wilder and woolier than the proverbial winter underwear.

The opening of our social season was as guests of the Frosh at the Soph-Frosh Dance at the Royal York, where 900 couples beat a timely foot to Stan Patton's music. This was followed by our Christmas party with the Frosh at the Royal York, where we danced to Mel Hamill's band in the Crystal Ballroom.

Being in the peak of condition, we celebrated the Junior-Soph-Frosh at the Royal York. (We were at that place more times than the bailiff.) The band of the evening was the Modernaires. A fine time was had by all — including those present. We wound up our festivities before studying for the finals, by staging the 4T4-4T3 Year Party at the Arcadian. It was tops (and our heads are still spinning).

The sale of year cards this year was gratifying, and our expenditures were kept within the limits of the budget.

We wish the best of luck to the incoming executive in guiding a year which is well worth working for. Also, we hope that they will have as much fun as we have had.

JOHN WARD,
President.

CLASS OF 4T3

Juniors! We came back to the little Red School-house thinking that at last we were past the half-way mark. At least we could sit back and rest after two years' struggle. Then we began to hear ugly rumours about three or four lab reports a week. Then we began to realize just what that song, "I've got to do a Lab Report", that we'd heard in the 1940 edition of School Nite, really meant.

Even with all our work, our social life did not suffer too badly. By arrangement with the First Year we were able to attend the Soph-Frosh on November 7th. Needless to say, very few missed this opportunity to become acquainted with our new colleagues (and their new babes). The 52nd School Dinner was our first official introduction to Freshman Dean C. R. Young. Wing Commander T. R. Loudon, so well remembered for his first year Statics lectures, was guest speaker on this occasion. Fourth Year joined us on December 16th, when we held our Christmas Party at the Silver Slipper. Ossie William's orchestra put us in the mood for the holidays with his last minute novelty numbers.

The New Year was barely started when the School At-Home was upon us. The decorations by the Architectural Department will not soon be forgotten. Then came School Nite with its Osculometer. Next year I'll get to the end of that scale if I have to start practising now. On February 20th, the Modernaires supplied the music, C.P.R. the hotel, and various firms the traditional forty beers, as First, Second and Third years held the annual Junior-Soph-Frosh. The executive decided to slip in one more fling before the inevitable came. A successful year party was held with the Second year at Eddie Stroud's Arcadian on March 5th.

It really has been a great year for all of us and we are all looking forward to the last lap. The executive is very grateful to the year for the support received and we know that with the incoming executive we can expect a really fine Graduating Class.

W. A. Moeser,
President.

W.S.GLYNN
CIVIL CLUB
D.H.W.ALLAN
SEC'Y-TREAS.
K.H.KIDD
VICE-PRESIDENT
J.P.D.ROGERS
PRESIDENT
W.L.BLAND
ATHLETIC REP.
V.H.SMITH
M.U.H.CLUB
C.F.T.ROUNTHWAITE
ARCHITECTURAL CLUB
FOURTH YEAR
EXECUTIVE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1941-1942
D.J.PARRISH
MECHANICAL CLUB REP.
E.DONHAM
INDUSTRIAL CHEMICAL CLUB
K.A.BUCHANAN
ELECTRICAL CLUB
C.B.LIVINGSTON
ENGINEERING PHYSICS CLUB
A.B.EXTENCE
DEBATES CLUB

CLASS OF 4T2

With four long years behind us, our earnestly anticipated goal of graduation close before us, it is in order that we glance back through those years in a brief review.

Those initial days when first we stepped into the barrage of registration, green ties and the Sophs persuasive actions, seem remote and hazy. Yet we recollect a fighting band of Frosh, under Croft Huddleston's leadership, reaping vengeance on our oppressors with the capture of the Flag. But at our first School social function, the Soph-Frosh Dance, all war-like measures were banished.

Under "Backie" Dick we Sophs coralled many an innocent freshman, but to a less severe extent than previously, since the opening guns of World War II heralded the natural suppression of student displays.

In our Junior year Don Finlayson gave us good Year Parties and an even more united class spirit.

And now with graduation close at hand, we are restless and eager to take our stand in our country's ranks with industry and the forces. Each of us has a task to perform in our united cause against the foe. Although in the coming years we may be scattered far and wide across this globe, our year is certain to retain the unity and friendship which our four years have fostered.

J. P. D. Rogers,
President.

J.H. TURNER
COUNCILLOR

C.B. LIVINGSTON
SECRETARY-TREASURER

J.P.D. ROGERS
VICE-PRESIDENT

K. KIDD
PRESIDENT

W.F. BRUNDRIT
VICE-PRESIDENT

W.S. GLYNN
COUNCILLOR

W. BLAND
COUNCILLOR

PERMANENT EXECUTIVE
41 2

Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1941-1942

R.E. KLEIN
COUNCILLOR

A.M. SLACHLIN
COUNCILLOR

E.E. BONHAM
COUNCILLOR

F. DOTY
COUNCILLOR

W.W. BOLTON
COUNCILLOR

Freeland
Toronto

4T2 PERMANENT EXECUTIVE

Four years certainly do pass in a hurry, don't they? It seems scarcely credible that our eventful days at S.P.S. are almost over. As we draw near the end of our "School" days, we look at the past years in retrospect, recollecting the many friendships and experiences we have enjoyed. Everyone of us has been enriched by his associations at S.P.S. and is anxious that the friendships made here should extend into his future life.

In order to maintain contact among the graduates of 1942, a Permanent Executive has been formed. This executive will maintain a record of the names, addresses and occupations of all the graduating class. This information will be available from the secretary and from the various councillors. It is planned to provide news of interest in the form of circular letters and through announcements in the *University of Toronto Monthly*. In addition, reunion gatherings will be organized at appropriate times.

For these various aims to be realized, it is necessary that every member give his support to the committee in every possible way. This will be particularly difficult under the unsettled conditions produced by the war, but for this same reason, our associations among the alumni should be all the more valuable.

Remember to keep in touch with the executive in the future, in order that we may continue to enjoy the friendships of our undergraduate days.

Here's wishing the best of good fortune and happiness to all the Class of 4T2 throughout the years to come.

President: K. H. Kidd,
57 Avenue Road,
TORONTO. MI.3438.

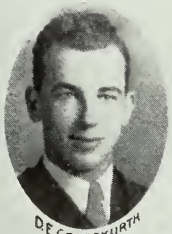
Secretary: C. B. Livingston,
160 Glen Road,
TORONTO. RA. 3432.

School Athletics

1942

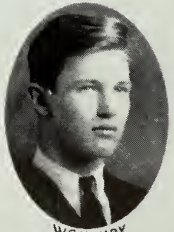
Engineering Society

THE UNIVERSITY OF TORONTO



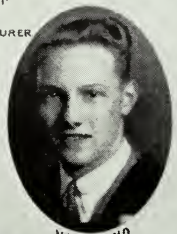
D.E. GROSSKURTH
SECRETARY-TREASURER

H.J. BARRETT
PRESIDENT



W.G. HENRY
VICE-PRESIDENT

M.J. AYKROYD
ADVERTISING MANAGER



W.L. BLAND
4TH YEAR REP.

ATHLETIC ASSOCIATION EXECUTIVE

R.C. QUITTENTON
3RD YEAR REP.

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1941-1942

W.W. MOFFAT
2ND YEAR REP.

W. SHARPE
1ST YEAR REP.

ATHLETIC ASSOCIATION

"We wuz robbed," "Everyone is against us"—these and others similar were the cries with which School greeted the announcement of our point cut in the T.A. Reed Trophy race. Our 1,000 point lead shows that we were wrong. If School could do this in a hurry-up campaign since Christmas, what is going to happen next year when Don has everything organized and rolling right from the start? Our sympathy goes to "Mac" who will have to figure out some other treatment for his problem child, "School".

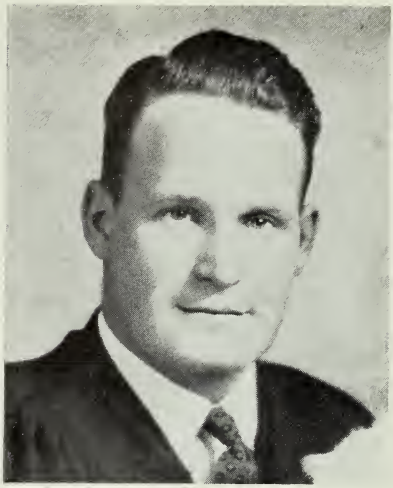
To all in School who are interested in athletes—and who isn't? —congratulations, and thanks for the way you stood behind your Association to put this new program over.

This year's rugby teams proved a disappointment, but it was not because the spirit was lacking. There wasn't a sorrier looking fellow than Coach Jim Hurst when his powerful Junior rugby team couldn't get rolling. Our success in the pool has more than made up for this. The soccer team was the real bright spot of the fall term. When our 50 basketball and baseball teams trotted out "Mac" tore out another hair. Jim Hurst and Jack Quist were the guiding lights in this extravaganza. Space does not permit covering all the activities, but you can be sure that our B.W. & F., Skiing, Track, and other teams were right in the thick of the battle.

Thanks are in order to "Mac" MacCutcheon for showing School the light. Too many people refuse to see how "Mac" has filled the gap left by the suspension of Intercollegiate sports. There can be nothing but optimism for the affairs of the Athletic Association under Don Grosskurth next year—so get in there and sweat, men!

H. J. Barrett,
President.

BRONZE "S"



This year, S.P.S. has awarded to Doug. Marshall its highest athletic honour, the Bronze "S". This award is presented each year to the Schoolman who, during his career at S.P.S. has displayed outstanding athletic ability and sportmanship.

In his first year, Doug. was a member of the Intermediate Intercollegiate Track and Field Team. He excelled with the javelin, discus and shot. Throughout his University athletic career, he was outstanding Track and Field star.

In his second year he played hockey for the championship Senior Varsity Hockey Team. With the start of Third year, Doug. returned to Track and Field, and also actively participated in the School rugby wars.

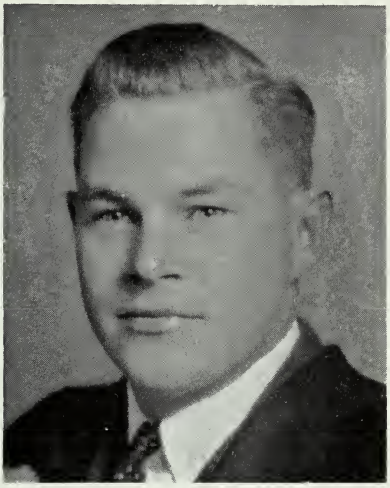
In his final year, Doug. was prominent in track and field, rugby—picked on University all-star team, baseball, and hockey. He was also on the executive of the University Athletic Association.

Doug. has been active in many sports and to his team-mates he has been noted for his clean play and as a true athlete "who never said die".

Schoolmen of all classes sincerely hope that Doug.'s successes will continue in his future career as an athlete and as an Engineer.

Good luck, Doug!

PHENE MEMORIAL TROPHY



The fifth winner of the Phene Memorial Trophy is Jim Bell. This cup is presented each year to the man on the Senior School Rugby Team, who, in the opinion of his team-mates, has shown the most sportsmanship.

Jim has played a prominent role in Varsity rugby since coming to S.P.S., and his sportsmanship, clean play, and love of the sport represent the true "School Spirit".

This Trophy, Jim, symbolizes the esteem and well wishes of your team-mates. May it always remind you of "the team" and their faith in you.

Good luck, Jim!

SENIOR RUGBY TEAM

Second Row: P. Turner, V. Smith, J. Mees, F. DeMarco, K. O'Donnell, J. Hawkin, P. Rogers, J. Lucas, H. Barrett, B. Bryce, D. Zimmerman, K. Gow.

First Row: D. Marshall, J. Plaxton, G. Reuben, I. Sloane, D. Grosskurth, T. Webb, R. Paul, J. Bell, D. Hamlin.

SENIOR SCHOOL RUGBY

With past performances making this year Senior School Rugby Team the pre-season favourite, the team hopefully took the field.

Showing invincible power in all departments, School easily disposed of Senior Meds in both games by scores of 14-0 and 23-0.

Although beaten 1-0 in a closely-fought battle, School returned to take St. Mike's 16-1, and thus became undisputed group champions.

With Lucas missing from the line-up due to a dislocated shoulder, and the backfield functioning below par because of various injuries, School sallied forth against Victoria.

The line functioned to perfection as usual, and 117 yards were gained by rushing compared to Vic's 43 yards. School gained 127 yards passing, while Vic amassed a total of 150 yards. The kicking was fairly evenly matched and Victoria finally won a closely fought battle by a score of 2-0.

The fact that Doug Marshall, Don Grosskurth, Jim Bell, Herb Barrett and Ken Gow were listed on the interfaculty all-star team shows how well their ability had been expended. They were chosen as being outstanding, but in reality were only symbolic of a great team in which every member played well and served to keep School with the tops in sports.

PECK TURNER,
Manager.

JUNIOR RUGBY TEAM

Second Row: J. Hurst *(Coach)*, V. Booth, S. Graham, B. White, R. McIntyre, J. Bromley, M. McBride, P. Aykroyd, K. Guy, M. Grass, H. Spence, K. Tettmar.

First Row: H. Stricker, G. Evans, J. Rettie, B. Seymour, B. Moffat, H. Seymour, W. Sharpe, W. Hambley, P. Cross, D. Currie.

JUNIOR RUGBY

As usual the turnout for Junior School rugby was large and there was the same old difficulty with equipment. The players were finally weeded out and a very promising team formed.

The line was one of the most formidable seen in interfaculty rugby for some time and next season it should really be something. At the snapback post was that great secondary player Walt Hambley; at inside R. Grass — a big two hundred pounder, M. A. McBride — an all star from Riverdale, P. Aykroyd — another huge tank, D. Currie — a big fellow from U.T.S.; at middle W. Sharpe — a city champ from Humberside, P. Cross — another city champ from Humberside, R. Moore — a scrappy fast moving fellow; at outside R. Seymour — a hard, clean player from Riverdale, W. Moffat — one of the hardest hitting outsides, J. Rettie — a good tackler, K. Guy — a small chunky fellow, B. Kelly — a good pass receiver.

Now come the ball toters, the men of the backfield. The plunging duties were handled very capably by McIntyre and Spence. Stricker and Seymour were our kicking aces as well as good plungers. Calling the signals were Brian White and little Georgie Evans, two fast men who will bear watching in the future.

The back, Vern Booth and "Stu" Graham were really fast and made sensational runs on many occasions.

The cut backs and reverses were the work of Ken Tettmar and Jim Bromley.

The Junior Rugby team put up an excellent showing, being beaten out by the powerful Vic team that later turned the same trick on Senior School.

JIM HURST,
Coach.

SENIOR BASKETBALL TEAM

Back Row: R. Brooks, J. Lucas, W. Bryce, W. Parchello, G. Workman.
Front Row: J. Wilson, F. Kellam, H. Barrett, J. Bell.

SENIOR BASKETBALL

With the schedule in its second half, it looks as if Senior School, with four wins and no loss, has clinched the senior circuit.

From Bell, Barrett, and Bryce of last year's interfaculty finalists, and Wilson, Kellam, Workman, Lucas, Brooks, and Parchello from the Juniors, Don Finlayson has turned out a fast, smooth-working team. In fact, the team is the most likely looking senior team School has turned out in some time.

Bell and Barrett still maintain their scoring feud, and now that the end is in sight, both are working hard to get the upper hand. As for the rest of the team, everyone scores — led by Kellam, Wilson, Bryce and Lucas.

With playoffs in the near future the whole team is anxious to get lots of work in—it's a good sign. May we be tops all through the playoffs.

W. L. Bryce,
Manager.

V BASKETBALL

School Fifths were grouped with Trinity B and St. Mike's C this year, and made a clean sweep of their group by winning all four scheduled games. The boys averaged almost 50 points per game as against 15 points for their opponents. The fellows being mostly freshmen will make welcome replacements to the Junior team next year.

Sebert and Ridell are the sharp-shooters on the team and round off, in the approved fashion, many smart plays set up by guards Danard and Grass. Grass also gets more than his share of rebounds off the enemy's back-board. Our second string of Goudey and Moses, backed by Jackes and Davis, are valuable reinforcements, and are gaining useful experience. Davis can be called upon with confidence to steady the players on either string. Goudey sinks quite a few baskets from the set position.

All in all, the boys play well together and are in there fighting all the time. The Fifths should fight their way into the upper brackets of the play-offs and will certainly cause several upsets on the way.

J. Rettie,
Manager.

III BASKETBALL TEAM

Second Row: G. Elliott, F. DeMarco, W. Johnson, P. Onasick, A. Halford *(Manager)*.
First Row: A. Chepkin, P. Schell, I. McCallum, J. Quist.

III BASKETBALL

The Third team this year consists of a hard fighting, never-say-die band of ball-players. Although a bit rusty from the lack of shooting practice due to increased activity in the gyms this year, the team has made certain about every close shot. The record to date shows two heart-breaking losses to U.C. III, and one win against Meds III by a comfortable margin.

Phil Schell—a good ball handler—is the mighty atom of the team who excells in screwy shots around the basket.

Ian McCallum—a tower of strength on the rearguard position. An amazing burst of speed and a fine long shot keep him among the high scorers.

Art Chepkin—a sure, tricky ball handler. A high scorer of no mean ability.

Walt Jonson—Walt is a man who plays hard and checks well, but gets rattled on "dog-shots".

Gord Elliott—A centre man who gives all, and usually winds up with a couple of baskets for his trouble.

Frank DeMarco—A good athlete who has turned his talent to the basketball floor. A steady player who is around when he's needed most.

Pete Onasick—a big man who fears nobody. An aggressive checker and an up-and-coming scorer.

Jack Quist—A tall boy who will be as good at basketball as he is at lacrosse with a bit more practice.

Our hopes of winning our group are a bit thin, but we're trying and having fun doing it.

A. W. Halford,
Manager.

IV BASKETBALL TEAM

Second Row: D. Gibson, R. Hladki, R. Howard, B. Gourlay, K. Van Wyck.
First Row: M. O'Laughlin, W. Evans, G. Thatcher.

IV BASKETBALL

To date, School Fourths have suffered only one setback, but should win their return contest with St. Mike's.

Gourley, Van Wyck and Howarth are the tall boys on the team, each being well over six feet. Gourley and Van Wyck each have taken a turn in sending twenty points swishing through the hoop.

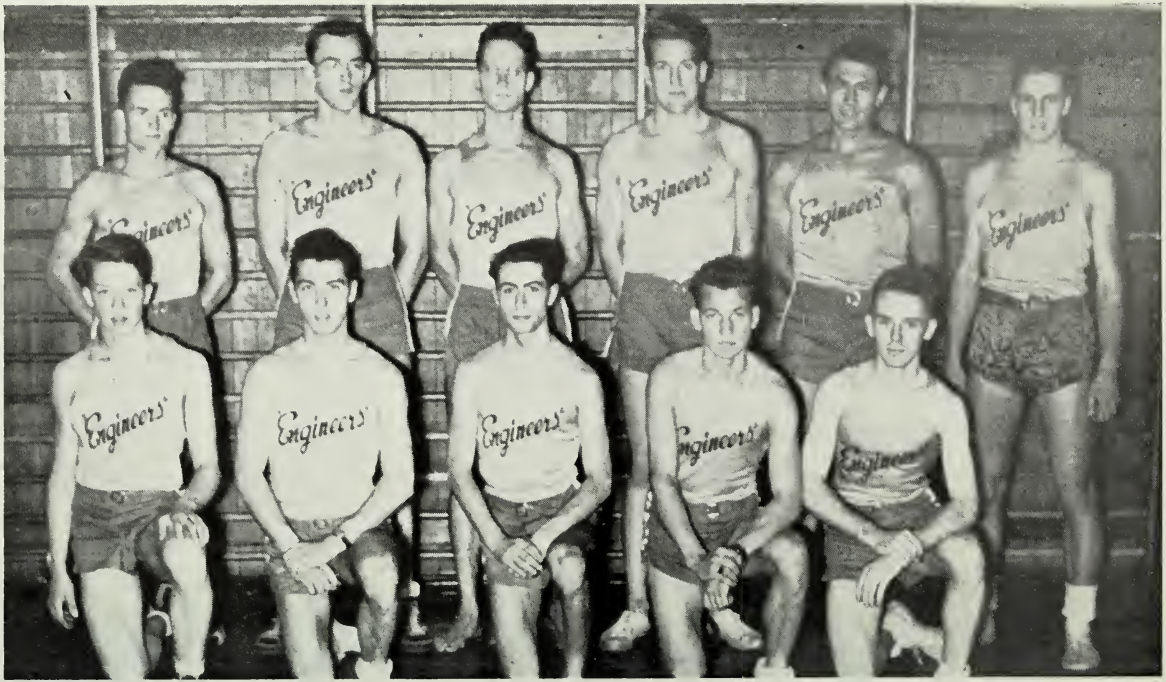
In O'Laughlin, Hladki, and Thatcher, we have three play-makers who set up the "tall-boys".

Last, but not least, we have little George Evans, who can do everything but put the ball in the hoop. George is coming closer every time out and should be cashing in any day soon. He provides the fighting spark for the team.

With a fine balance of height, accurate shooting and ball handling, together with a driving spirit, we have a team which shouldn't be stopped until they have that championship.

Don Gibson,
Manager.

TRACK TEAM



Second Row: R. Foulis, D. Pringle, L. Peckover, D. Wilcox, P. Onasick, V. Booth.
First Row: A. Jackes, G. Webster, G. Lorimer, P. McDonough, F. Lewarne, *Manager.*

TRACK AND HARRIER

This season the Rowell Memorial Cup, emblematic of Senior Track and Field supremacy in interfaculty competitioin, returned to School after an absence of some years.

The Engineers captured all Track and Harrier meets with the exception of the Novice Harrier, and they only missed that because of the participation of two of our freshman stars, Tamblyn and Feldhans, in an Intercollegiate fixture on the same day. The fact that Hec Phillip's Intercollegiate Track and Harrier squads were composed largely of Schoolmen indicates the number and quality of the S.P.S. entries.

No one man can be pointed out as the star of the team. Schoolmen placed in every event, and since the team is composed largely of sophs and frosh, this augurs well for the coming years.

In the sprints Vern Booth, Charlie McDonald and Pat McDonough went very well as they all placed in two or more events. Dud Wilcox, Johnnie Feldhans and Lionel Peckover, the quarter and half-milers, all pulled in more valuable points. In the distance runs Gord Lorimer, Roy Foulis, Bob Tamblyn, Lionel Peckover and Johnnie Feldhans more than held up their end.

School showed to better advantage in the field events as Marshall, Pringle, Onasick, Watts and Co. swept the weight events, and Booth, Webster, Jackes, McDonough and Lewarne took care of the jumps.

With so many first and second year men on the team, Hec Phillips should be able to assemble a potent School and Intercollegiate squad in 1942.

R. F. Lewarne,
Manager.

SOCCER TEAM

Second Row: H. Seymour, P. Dandeneau, D. Hibbard, J. Wilson, F. Roberts.
First Row: W. Turner, A. Riguero, A. Capper, C. Martin, H. Thomfson, M. Kaufman.
Absent: J. Currie, R. Seymour, D. MacKenzie.

SOCCER

After eight years the Arts Faculty Cup has returned to S.P.S. with this year's Championship team. Soccer is definitely on the up trail in School and soon we shall dominate it as we have almost every other sport.

This year's team was just as good on the field as it was on paper. In six scheduled games and six play-off games, the team scored 25 goals against 5 for the opposition. These goals won 9 games, tied one, and lost two. This shows that the team was well balanced, with sufficient defense to hold the opponents off, while the forwards scored the goals that counted.

In goal, freshman Thompson played an excellent game as shown by his 9 shut-outs. The full-backs Knelman and Bob Seymour were the best combination in the interfaculty league. Hal Seymour, our ace half-back, led the line as it alternately provided offensive and defensive strength. He was flanked by Roberts and Wilson, both capable men. The forward line was a smooth working quintet. Currie, Kaufman, Riguero, MacKenzie and Hibbard made the opposing goal keepers tremble when they began their many dangerous rushes. This line was ably supported by Capper, Martin, Turner and Dandeneau. Team spirit won the cup—not any individual player—in the way all team games should be won.

There were no fourth year men on the team so we will not be weakened by graduation. This year there were more players who turned out than we had room for on the team. Next year there will be two School Soccer teams and we will need a good crop of first year men, so turn out, frosh. Watch for practice notices next fall. This was a good year—let's make next year better, by having an all S.P.S. final.

David E. Hibbard,
Manager.

SENIOR LACROSSE TEAM

Left to Right: H. Moorehead *(Manager)*, F. Lewarne, M. Radmore, F. Kellam, G. Reeves, J. Bell, B. Bryce, J. Quist, A. Capper *(front)*.

SENIOR LACROSSE

For the second consecutive year the "Doc Dafoe Cup" remains with the Senior Engineers, and helps the cause for the T. A. Reed Trophy.

A strong team was built with the remainder of last year's championship team—Radmore, Quist, Reeves, Bryce and Moorehead, and star players from the Junior ranks in Kellam, Lewarne and Capper. Jim Bell thought he'd take a whirl at the "gutted stick" game, and played a steady game all year.

Although grouped with the strongest teams, Vic, Pharmacy and St. Mike's, at the end of the schedule we found ourselves on top, having won all our games, excepting a 4-4 tie with Vic.

U.C. coasted into the semi-finals, but for the second consecutive year, we trimmed the team from the Arts College to the tune of 14-8.

We played Pharmacy in the finals, and in a two-game series managed to hit the twine 35 times to their 10, showing both offensive and defensive power.

Everybody had their good games, and all scored frequently excepting our goalie, Art Capper, who played a decidedly improved game over last year, with superman protection from Bryce and Reeves.

Congratulations, boys, and I hope that next year will repeat the performance of the last two years.

H. F. Moorehead,
Manager.

III LACROSSE TEAM

Left to Right: J. Scott, R. Forestell, B. McDonough, R. Upper, J. Hull, J. Heather, M. Radmore.

III LACROSSE

Although thought of as a farm team, this outfit proved to be the fightingest team that ever ran blisters on their feet on the Hart House floor for good old School. What they lacked in ability, they made up in team spirit and in the will to win. We were fortunate enough to draw U.C. as our first opponents—they were the second best team in the league and we were without practice. They trounced us—'nuff said, but not only did we lose the game, but the Juniors picked up two of our players and another went out with a knee injury. We came right back to trounce Meds and found a scoring star in "Muscles" Heffernan. In the return engagement with U.C. we lost a close 8-6 verdict after leading up until half time. They certainly showed plenty of fight that night. They once more defeated Meds handily and ended a good season batting 500. We had a newcomer, Gil Morris, in goal, and he proved to be a pleasant surprise as he even went to the trouble of putting his face in the way of the ball to save a goal. On defence were Brennan—a veteran, and Scott—a freshman, and it was as much as the opposition's life was worth to come into our end of the floor. Up front, Kent was our leading goal scorer, Forestell the most dependable, Upper had the hardest shot, and McDonough was the busiest man I ever saw; Heather, brainy but slow, also went to the trouble to lose half a tooth, and Hull and Heffernan were the two handy men. To tell the truth, yours truly, the brains of the team, was responsible for any and all success.

F. "Mick" Radmore,
Manager.

SENIOR WATERPOLO TEAM

Second Row: D. Allan, F. DeMarco, B. Staples, G. Reeves, C. Eastwood.
First Row: P. Rogers, P. Turner, R. Byrnes, J. Iglesias.

SENIOR SCHOOL WATERPOLO

Counting on Billie Staples' condition and Frank DeMarco's shooting eye, the Sr. School Waterpolo team upset their regular Saturday night schedule by plunging five times into the depths of the Hart House pool.

Although the team work left no time for practices or conditioning, the team came through to win their group easily.

Doug Allan and Pete Rogers played their usual rugged and effective game on defense.

George Reeves baffled his opponents with his powerful backhand shot. George could never tell where his shots were going and consequently the goalies hadn't a chance.

Ray Byrnes and Frank Iglesias turned out regularly to do their bit on the forward line.

Clive Eastwood, who was a newcomer to the game filled the yawning gap between the posts.

Although eliminated from the play-offs in a sudden-death fixture, Senior School poloists, with a balance sheet of four wins to one loss completed a fairly successful season.

PECK TURNER,
Manager.

JUNIOR WATERPOLO TEAM

Second Row: J. Brant, P. Quentin, H. Spence.
First Row: J. Northwood, W. Moffat, J. Brace, C. Rimmer.

JUNIOR WATERPOLO

The Junior Waterpolo team was put in Group I with Senior U.C., Vic I, and Senior Meds, because the Junior Swimming team had won the Interfaculty championship and it was figured that they would be able to field a good waterpolo team. This seemed to be the case when they defeated Senior U.C. 7-1, and Senior Vic 2-0. But the team looked like a third rate team when they lost to Senior Meds and when they were put out by Senior Vic in the last game of the season to the ignominious score of 4-1.

The team, considering the individual players, should have reached the finals, but did not get out of its own league. So here are the would-be finalists:

The forwards: —

Bill Moffatt—has a very hard shot when he has time to wind up. Bill is also a sprinter with the Intercollegiate team. Fred Sansom—needs about three feet to get going at full speed. Fred can check two men with an amazing speed and condition that he acquired from swimming the 100, 200, and 440 yard free style for the Varsity squad.. Johnny Northwood—Another swimmer from the University swimming team who, like the other two on the forward line, is trying to disprove the saying that "Swimmers do not make waterpolo players".

The defence and Rover: —

Julian Brace—the handiest man on the team. Any time we want one particular man checked, we let Julian check him and that means that that man gets no goals.

Pete Quentin—has had plenty of experience as he was captain of Victoria waterpolo team last year. A good man to have to steady the team.

Harvey Spence—although a slower swimmer than the forwards on the team, he could play an equally good game on either defence or forward.

Chuch Rimmer—a very good defence man who tries to keep the ball deep in the opponent's territory.

The goal:

Warren "Jeff" Brant — just started this year, but has showed great improvement as he learned the tricks of the game. He stopped many a shot that seemed labelled "goal".

E. J. Northwood,
Manager.

III WATERPOLO TEAM

Second Row: W. Arthurs, J. Boa, S. Paikin.
First Row: J. Dempster, D. Mulholland, N. Lea.

THIRD WATERPOLO

The Third Waterpolo Team was inaugurated this year to take care of those men in first and second years who were newcomers to the sport. Every member of the team was playing his first season at interfaculty waterpolo. This record of experience did not give the Varsity a good looking team on paper. However, a wealth of enthusiasm, including the desire to practise, gave the boys the needed edge in their group.

Undefeated in six starts, having tied Dents in their final game, the boys entered the playoffs against Vic I with a fighting chance of making the finals. The ballhandling of Hill, Lea, and Boa around the goal, and the playmaking passes of Jim Dempster kept the ball almost always in the other end of the pool. When the opposition got past centre, Payne and Paikin protected the most underworked goalie in the group, Mulholland, from even feeling the ball. Ample relief for all positions was supplied by Arthurs, Hicks and Brennan. This team, having made a real start this year, looks like a future powerhouse to regain the Eckhardt Trophy.

Doug Allan,
Manager.

SENIOR HOCKEY TEAM

Second Row: T. Stephenson, *Coach;* I. Shepard, D. Marshall, J. Hawken, J. Dickie, M. Douglas, D. Grosskurth, N. Prideaux, *Manager.*

First Row: W. Bland, F. DeMarco, G. Workman, R. C. Quittenton, R. Forestell.

SENIOR SCHOOL HOCKEY

After losing to Meds in the season's opener, Thor Stephenson's Senior School team has won three games and tied one. Workman certainly has an enviable record, with three shutouts to his credit. On defense, Doug Marshall has done a Trojan job, playing the full forty minutes for two games when the team was shorthanded. DeMarco, Simpson and Quittenton also made their presence felt on defense.

Our first string line of Dickie, Grosskurth and Douglas are really "stepping" this year. Besides being fast, they have scored ten goals between them. Forestell, Sheppard, Hawken and Bland, all game back-checking forwards, complete our fighting aggregation.

In the first game with Meds, School carried the play all the way but couldn't find the net. Beefy MacMillan seemed to be in the way most of the time. The outcome was a 4-0 defeat.

Don Grosskurth clinched the second game with St. Mike's by scoring three quick goals in a row. Jim Hawken and Murray Douglas added two more to make it 5-0.

Trinity proved our equal in the third game which ended scoreless.

Senior School reversed the tables on Meds in the fourth game. Doug Marshall's shot from the blue line started the puck rolling, and Dickie and Douglas kept it going, resulting in a 4-0 win.

Our fifth game with St. Mike's produced some fluke goals, but we wound up on the right side of a 5-2 score.

It is now certain that Senior School and Trinity will represent Group II in the play-offs. Senior School will be in there battling hard to bring the Jenning's Cup to S.P.S. this year.

N. L. Prideaux,
Manager.

JUNIOR HOCKEY TEAM

Third Row: R. Maughan, B. Hamilton, A. Riddler.
Second Row: J. Allan, H. Seymour, G. Ball.
Front Row: P. McDonough, J. Boa, D. Simpson, R. Belford.
Absent: J. McLelland, B. Kelly.

JUNIOR SCHOOL HOCKEY

This year, Junior School was again placed in the same group with Vic I, U.C. I, and Dents. So far, five games of the scheduled six have been played, with School winning four of these. Regardless of the outcome of the sixth game, the team is assured of ending up first in the group, and thus winning a spot in the playoffs.

The remarkable success of the team is due chiefly to the work of three freshmen—Don Simpson, Art Riddler and Gord Ball. Riddler is the backbone of the three defensemen, the other two being veterans of last year's championship team—Bob Hamilton and Hal Seymour. Simpson and Ball with Jimmy Boa play on the first line and, between them, have scored well over half the team's goals. The other line of Ron Maughan, Pat McDonough, and Brian Kelly is also a fast-stepping line which can hold its own with any in the league. J. Allan acts as alternate forward and his efforts have come in very handy at all times. Last, but far from least, we have Jack McClelland in goal. Jack has turned in many sensational saves and so far he is credited with the only shutout in the league.

In the first game of the season the team was beaten 4-2 by a strong Vic team. After a couple of hard practices, however, the team came right back and scored successive wins over U.C., Dents, Vic, and U.C. again, beating them by the scores 5-2, 6-1, 2-0, and 6-2, respectively.

The team is thus once more upholding the honour of School, and it is hoped that they may follow the lead of last year's team and once more win the Interfaculty Championship and keep the Jennings Cup at School.

Dick Belford,
Manager.

III HOCKEY TEAM

Second Row: V. Stock, J. Giovanetti, B. Boland, J. Quist, W. Moeser, R. LeSueur, A. Goch, H. Macklin, *Manager.*
First Row: J. Iglesias, R. Kellio, C. Livingston, P. Gordon, R. Code.

III HOCKEY

The third hockey team was poorly supported at the opening of the season, with only a few fellows turning out to the practices. Consequently, when an unexpected game with Knox "B" team came up, we were found lacking and although the boys fought hard we were taken over the barrel for a 4-2 fall. Perhaps this was a good thing. It stirred up a lot more enthusiasm, and with the help of Jim Dickie as coach, the team was whipped into such shape that they tore into U.C. thirds and white-washed them 10-0, aided by Bill Bland from Senior School. In the third encounter they met the Knox "B" squad once more and, despite their idle boast of what they were going to do to us, we gave them "what for" to the tune of 6-1.

Although the season is not over yet, the team appears to be on the road to winning its group, and from there in will give a fighting account of itself.

We have on our line-up this year:

Charlie Livingstone—our goalie. Hasn't had much of a chance to show his wares yet, but has performed creditably when called on.

Johnny Iglesias—defence. A hard fighter who never lets up. Always dangerous when rushing.

Pete Gordon—defence. A determined player and a great lover of the boards.

Bill Moeser—defence. Dangerous at all times.

Val Stock—defence. A good guard on the blue line—from first year.

Ray Kallio—centre. A smooth little centre, always in the midst of the play.

Dick LeSueur. An enthusiastic right winger up from last year's fourth team.

Jack Quist—left wing. A hard fighter with a good eye for the nets.

Owen Boland—centre. A new man who is playing a nice brand of hockey.

Joe Giovannetti. A good forward who gets his lacrosse rules mixed with his hockey.

Ken Cameron. A good forward from fourth year.

Dick Code. A standby from last year's forward line.

A. Goch. A promising forward from first year.

HAROLD MACKLIN,
Manager.

V HOCKEY

Second Row: A. Cominsky, J. Pawling, H. Ewing, A. Duncan, R. Ander, W. Mitchell, R. Lalor, A. McConvey.
Front Row: J. Orlando, R. Sheppard, R. Thompson, K. Oliphant, J. Freele.

V HOCKEY

This year School fielded a fifth hockey team made up almost entirely of first year men. The team showed good defensive strength and a fighting set of lines.

At the time of writing, the team has won three of its four starts, each win being via the shut-out route. The first game against Emmanuel was a scrappy affair. Finally Duncan, a defenseman, broke through to score from five feet out. From then on we coasted to 1-0 win.

The second game against Wycliffe was also a 1-0 affair, Pawling getting the goal. The team worked much more smoothly as a result of the practice. Then followed our first loss. This was to Pharmacy, who were on the winning end of a 3-2 score. However, the next game we again played Pharmacy, beating them 3-0. The score didn't, however, show the play. Thompson, our goal-tender, had only 1 shot to stop all game and Ewing turned in a fine performance, getting two goals and a third just as the bell rang, which the referee disallowed.

The team lines up as follows:

In goal there is Thompson—his eye on every play.

On defense we have Duncan, noted for his bull-like rushes, and teamed with him, Ralph Ander, a strong checker. The other defense pair is made up of Ewing and Cominsky, a tough pair to get past. Ewing especially has shown himself to be a fine rusher, being very fast on the breakaways.

The forwards are Pawling, Oliphant, and McConvey; Freele, Lalor and Sheppard, with Mitchell as spare man. The first line has proved so far to be the goal getters, with Pawling being especially good with his fast shots. The other line is fast skating and hard fighting and are always in the opponent's territory.

The team isn't star-studded, but is possessed of a very strong team spirit and they are all in fighting for the puck from the first ring of the bell. I feel confident that they will win the group title.

John Orlando,
Manager.

SENIOR BASEBALL TEAM

Second Row: T. Lapp, G. Morris, J. Leitch, D. Hamlin, D. Isbister, H. Greeniaus.
First Row: C. Livingston, W. Robinson, J. Cawley.

SENIOR BASEBALL

This year Senior School acquired a well-rounded ball team from the large aggregation of hopeful aspirants in the field of fans and flies. The team was picked before Christmas and a little order was instilled into the shambles before the first game.

Unfortunately, the team only started to roll after dropping the first game to U.C. Three wins, a tie, and a flukey loss to U.C. again, placed us in number two position in the group of Senior Meds, Vic, and Senior U.C. Unfortunately, this was not good enough, but it was a lot of fun.

Jim Cawley, the best catcher in the league, was consistently good all year and his whip was responsible for many a put-out at second and third.

Bill Robinson, speed ball pitcher de luxe, was right on after the first game.

First base was held down by Morris, the man with the telescope reach, and a dependable hitter in the pinches.

Luke Hamlin at second was death on base runners and has a mean batting eye.

Bill Bland at third, was on his toes all the time and had a nice combination with Morris, at first.

Charlie Livingston handled the hot spot at short to perfection and was the most consistent hitter on the team.

Ken Buchman, Terry Lapp, Don Isbister, Hugh Ashton and Greeniaus handled the carrom shots off the side walls with the greatest of ease.

It was a lot of fun and now we can settle down to more serious spring training and ease our conscience.

So Long,

J. M. Leitch,
Manager.

JUNIOR BASEBALL TEAM

Second Row: K. Glenn, J. Brant, P. Mason, D. Gibson, R. Seymour, S. Moses, J. Orlando.
First Row: H. Spence, J. Rettie, J. Boa, W. Robinson *(Manager)*, R. Hladki, H. Stricker.

JUNIOR BASEBALL

Owing to an early start — there were two practices before Christmas—a mighty fine bunch of lads was picked out for our Junior team this year, in spite of the fact that there were so many departmental teams entered.

Our first game against Junior Vic was a walk-over, with the boys running up a total of 14 runs. The second game against Meds was another story. The boys batted just as hard, but didn't hit nearly as much, and took a 4-1 beating. A rally in the third game left us on the long end of a 10-1 score against Junior U.C. The return match against Vic gave School another big win of 11-1. The loudest and hottest game of the season was our return match with Junior Meds. Needing this game for a berth in the play-offs, the boys put up a great effort, but were only able to eke out a 1-1 tie.

Roger Hladki was our first line catcher, and a mighty good all-round player.

Herb Stricker did the big part of the pitching, and the other teams had plenty of trouble touching him. Without a doubt, Herb is one of the fastest and smoothest pitchers School has had in a long time.

K. Glenn and W. J. Brant were our two relief pitchers. They both did a good job in the box and their batting contributed heavily to the scores.

Don Gibson held down first base, and really held it.

Pete Mason was relief catcher and first baseman with a mighty fine batting average.

Jim Boa on second, doesn't miss the ball when he's catching or batting.

Syd Moses on third is a first-rate fielder and the despair of the opposing pitchers.

Jack Rettie on short just can't be beat! One of our heaviest hitters.

Our fielding staff was made up of Harvey Spence, Bob Seymour, and John Orlando. These good men really made their presence felt when they stepped up to the plate.

On the whole, this team has been one of the best, and promises to be top notch as a Senior team next year.

W.A. Robinson,
Manager.

BOXING, WRESTLING, AND FENCING TEAMS

Second Row: W. Arthurs, D. Grosskurth, K. Gow, D. Currie, H. Sobcov, D. Eisen.
First Row: J. Heffernan *(Manager)*, E. Pearl, S. Greenslade, D. Houghton, W. Mitchell.
Absent: D. Olson, L. Baker, W. Kuhn, R. Scott, W. Henry, J. Mees, R. Quittenton.

BOXING, WRESTLING, AND FENCING

Once again the hardy men of the Blue and Gold have put away their slide rules and come forth to show that they are still masters of the manly arts.

With a large number of entries in almost every weight, Schoolmen did all but make a clean sweep of the Senior Assault. Eleven of sixteen wrestling finalists were Schoolmen with Greenslade 135, Houghton 145, Mitchell 155, Grosskurth 175, and Scott, heavyweight, winning their events. Billy Arthurs at 165 made a nice showing against Intercollegiate Champion Ed. Jones of Dents. There was not as complete an entry list for the Boxing Team, but the fellows who participated made up in quality for their lack of numbers. Sobcov 125, Mees 145, and Gow, heavyweight, were crowned Assault Champions. Johnny Mees and "Weed" Quittenton, both of School, put on the best scrap of the Assault with more experience giving Johnny the decision. We lose Johnny by graduation, but "Weed" will be right in there punching again next year.

The final Fencing Assault hasn't come off at the time of writing, but we are sure that with fellows like Huckle and Cavanagh in there, School will come out on top. Cavanagh won the first Novice Assault for School.

With all the team except Johnny Mees back, and with some recruits from the Frosh of 4T6 and others who didn't have time to turn out this year, we anticipate an even bigger and better team for next year, so come on fellows, come out and push School up on top again in '43.

JERRY HEFFERMAN,
Manager.

SKI TEAM

Second Row: F. Connor, B. McDonough.
First Row: H. Bennett, R. Stewart, W. Kingsmill, H. White.

SKIING

The S.P.S. team again captured the honours at the Intramural Ski Meet. The race consisted of four events—the Downhill, Slalom, Cross-Country, and Jumping events. Harry Bennett of first year proved to be the dark horse of the race. He captured the Downhill and Jumping honours. Charlie Keith, another first year man, won the Cross-Country and placed well in the Jumping. The Slalom race tripped up the School team and left us in third place. School entered some five teams, and the picture represents members of some of the teams. The senior team with Jack Fox and Fred Connor, both Interfaculty champs of previous years, found themselves ousted by the younger S.P.S. team, but was none the less much in evidence.

Brian White showed good time in the slalom, but in the second run he got into a fight with a flag and the flag won. Bib Stewart, a white hope from Ottawa, showed excellent style in the slalom and a good pair of heels in the cross-country. We hope to see greater things of Bob next year.

As this article is being written, the School team of experts is planning a trip to Collingwood to enter the C and D class invitation meet of the Toronto Ski Club.

W. G. Kingsmill.

SWIMMING TEAM

Second Row: P. Aykroyd, F. DeMarco, T. Graham, D. Muller.
First Row: J. Northwood, N. Lea, W. Moffat, C. Rimmer, L. Sommerville.
Absent: W. Staples, F. Sansom.

SWIMMING

School made a complete sweep of all the swimming meets this year. The addition of sensational freshmen to the old steady winners gave us a team that was practically unbeatable.

During the fall term, School entered two teams in the "50 Yard League". This league was made up for the purpose of working up an interest for the Interfaculty meets. The races in it did not exceed 50 yards per man.

Senior School with Patterson, Ferns, Tait, Byrnes, Mueller, Iglesias, Rimmer, Payne, Graham and Hill, won their group championship easily, but were edged out in the semi-finals by the Vic team. Patterson and Mueller were the stars of the team but every man was in there fighting with real School Spirit.

But Junior School made short work in the finals. The score was 24-9. Northwood and Moffat from last year's team were almost outshone by freshmen Sansom, Aykroyd, Lockhart and Lea. Sharpe, Brace and Boa rounded out the team.

School took the Novice Interfaculty swimming meet with no difficulty. Besides quality, they had quantity because they established a new record for the number of entries—72 in all.

Out of all these swimmers, final teams were picked out to represent School in the Senior Interfaculty Meet. Following are the names of those chosen: Northwood, Moffat, Sansom, Lea, Sommerville, Mueller, Aykroyd, Graham, Rimmer, and Staples.

Well, say, when this bunch are all on one team it spells murder for the opposition, and that exactly what it was in the meet. The final result was S.P.S. *45*, U.C. *13*, Meds *10*. School took first place in everything but the diving. Sansom was the star of the night, swimming on the winning Medley team, taking the 440 and coming second in the 100 free-stroke. Northwood was on the winning Medley team together with Sansom and Rimmer, and then took the 100 yard back-stroke, just in front of our Bill Staples. Lea took the 200 yard breast stroke, Aykroyd the 100 free-stroke and Moffat the 50 yard free-stroke. The relay team of Moffat, Aykroyd, Mueller and Graham came in almost a length of the pool in front. Sommerville showed promise in the diving.

Just to prove how good these birds are, seven of them—namely, Moffat, Northwood, Staples, Aykroyd, Sansom, Lea and Mueller were picked on the U. of T. Varsity squad. Nice going, fellows, let's see if you can carry the Varsity team on to victory and confirm the statement that School is the leading faculty in the U. of T.

FRANK DEMARCO, *Manager.*

JUNIOR LACROSSE TEAM

Left to Right: G. KEARY, I. CURRIE, F. WINN, B. KELLY, H. BOYLE, J. TURNER, A. CROSBY, A. GORMAN, W. MOOREHEAD, G. REEVES, *Manager*.

GYM TEAM

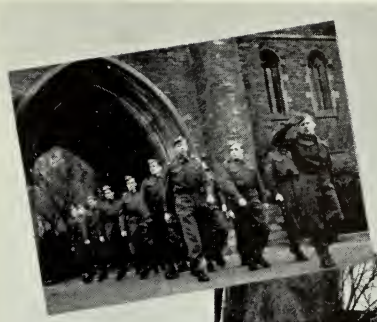
Left to Right: C. Johnson, A. Jackes, D. Craig, G. McRostie.

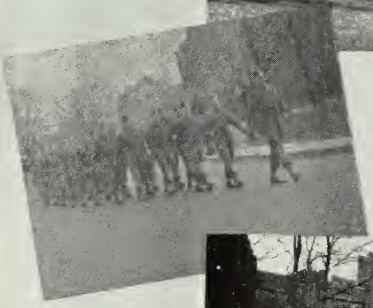
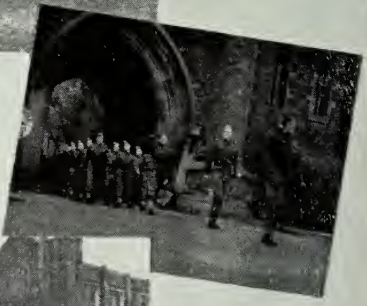
"S" HOLDERS

Fifth Row: I. McCallum, H. Seymour, T. Webb, A. Capper, J. Iglesias, B. Seymour.
Fourth Row: M. Aykroyd, R. Hamilton, D. Grosskurth.
Third Row: O. Smith, G. Workman, J. Grant, W. J. Parchello, W. Johnson, I. Shepherd, R. Muller.
Second Row: R. Pile, G. Lorimer, A. Chepkin, G. Morris, J. Rettie, H. Ashton.
First Row: O. Turner, G. Zimmerman, J. Heffernan, F. Lewarne, C. Theuerle, B. Bland, A. Halford.

JUNIOR BASKETBALL TEAM

Second Row: D. Pringle, Baker, Coach, V. Booth, J. Brant.
First Row: T. Patterson, H. Goldstein, J. Turner.



UNIVERSITY OF TORONTO CONTINGENT CANADIAN OFFICERS TRAINING CORPS

Military training first appeared at the University of Toronto about 1861 when "K" (University) Company of the Queen's Own Rifles was formed of members of the University Staff and students. This Company took a notable part in the North West Rebellion of 1885 and the Fenian Raids in 1886.

The next military organization within the University was the formation in 1901 of the 2nd Field Company, Engineers, to be organized in the Non-Permanent Forces in Canada, which was known as the University Company.

It was not until 1914 that military training took definite shape in the University of Toronto when the formation of a Contingent of the Canadian Officers Training Corps was authorized with a strength of about 1,800.

In addition to the contribution made by the C.O.T.C. during the Great War of 1914-18, the University raised No. 4 General Hospital, the 67th Battery C.F.A. and several reinforcement Companies of the P.P.C.L.I., for overseas service. Also a special Overseas Training Company of the C.O.T.C. was organized for those aspiring to commissions in the Imperial Army.

At the commencement of the present war, the Contingent under command of Lt.-Col. H. H. Madill, V.D., had a peace time strength of slightly over 300. By the first of October, 1939, the enrolment had increased to over 1,700, of whom about 500 were University graduates. Graduates, or undergraduates in their final year only, were allowed to complete their qualifications in one year. The remainder were enrolled in a two-year course.

By the following year, 1940-41, the National Resources Mobilization Act was in force. The Government reiterated the advice that it was in the national interest that undergraduates should complete their academic courses before being called for service. A postponement was therefore authorized for undergraduates provided they were receiving training in the C.O.T.C.

In the fall of 1941 Officer training was limited to those in Category "A" who had previously had one year of military training and expressed their willingness to go on Active Service.

Under the direction of Major M. B. Watson, Chief Instructor, instruction was given in practically all arms of the service. The period up to the middle of December was devoted principally to those subjects which are common to all arms, on which candidates were examined at that time.

During the next term instruction was carried on independ-

ently by the various arms, examinations for which were held in the latter part of March.

The Training Centre Battalion of the Contingent, under the command of Lt.-Col. W. S. Wilson, E.D. (the second-in-command of the Contingent), was formed in the fall of 1940, to conduct the training for those not yet proceeding to qualifications in one of the arms of the service. Undergraduates must first serve at least one year in this battalion. The strength is over 1,500, and Major G. R. Lane is Chief Instructor.

An Air Force Wing with an enrolment of about seventy who agreed to join the R.C.A.F. on completion of their academic courses, is administered by the C.O.T.C. and is in charge of Lieut. F. L. Hutchison. Members were issued with Air Force uniforms and received most of their instruction from Air Force personnel.

While most of the undergraduates in the Faculty of Applied Science and Engineering applied to take the course leading to qualification in the Engineers, many also chose Artillery, Signals, Infantry, Machine Guns, Army Service Corps or Ordnance.

The Engineer Company is commanded by Major H. W. Tate and the other Officers of the Company are:

Lieut. L. E. Shore	2/Lt. W. H. Steele
Lieut. C. P. Thompson	2/Lt. A. R. Smyth

In the Training Centre Battalion, undergraduates in the Faculty of Applied Science were enrolled in "S" Company or "T" Company, the Officers of which are:

"S" COMPANY	"T" COMPANY
Capt. L. T. Hargreaves	Capt. J. H. Horning
Lieut. C. F. T. Rounthwaite	Lieut. W. V. Tovell
2/Lt. E. Sager	2/Lt. G. E. Davidson
Lieut. T. C. Hastings	2/Lt. K. G. M. Ross
2/Lt. E. V. Polley	2/Lt. R. A. Stewart
2/Lt. W. A. Stevens	2/Lt. A. P. Quentin.
2/Lt. J. A. Simpson	

Of the above officers, four have since gone on Active Service, viz.: Lieuts. Hastings, Sager, Polley, Ross.

Although figures are not yet available, many undergraduates in applied science have received their commissions in the various arms. In the Engineers alone over seventy have received appointments in the past year and a half.

Both Battalions of the Contingent attended camp at Niagara-on-the-Lake in June. Those proceeding to Officers' qualification were examined on the practical portion of their course. Members of the Training Centre Battalion completed the latter half of their thirty-day period of training.